



STATE OF TENNESSEE

DEPARTMENT OF HEALTH

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January 13, 2023

Chairman Rusty Crowe
425 5th Avenue North
Suite 720, Cordell Hull Bldg.
Nashville, TN 37243

Dear Chairman Crowe,

The 2023 Annual Report of the Division of Health Planning is submitted herewith in accordance with *Tennessee Code Annotated* § 68-11-1622 (d) (10). The Division is tasked with providing an annual report to the General Assembly and annually reviewing the health status of Tennesseans. This State of Health Report serves to provide the General Assembly with a comprehensive overview of health in the state including health outcomes of individuals and information on the health of the state's healthcare system. This report provides a data-based roadmap to guide recommendations to be included in future State Health Plans.

Tennessee Code Annotated § 68-11-1622 creates the Division of Health Planning in the Department of Health and directs the Division to create a State Health Plan to guide development of health care programs, policies, and allocation of health care resources in the state. In addition to this work, the Division also is responsible for the Joint Annual Reports, the Certificate of Public Advantage, the State Oral Health Plan, and the review of Certificate of Need applications.

This report updates the General Assembly on the health status of Tennesseans through detailing metrics across the four key areas of the State Health Plan framework:

1. A Healthy Start: Assesses the state of health among Tennessee's children and youth by reviewing metrics on social determinants of health, health behaviors and conditions, and pregnancy and childbirth.

2. A Healthy Life: Assesses the state of health among Tennessee's adults and older adults by reviewing metrics on social determinants of health and health behaviors and conditions. Additionally, specific metrics were used to review health in Tennessee's older adults.
3. A Healthy Environment: Assesses the state of Tennessee's environment by reviewing metrics on the built environment and environmental health.
4. A Healthy System of Care: Assesses the state of Tennessee's health care system by reviewing metrics related to three of the Principles for Achieving Health outlined in Tennessee state law: Access, Quality of Care, Workforce.

Through providing this data-based foundation reviewing over 100 metrics to assess the health status of the State, this report will guide the development of State Health Plan recommendations and ultimately work towards the Department's vision of **"Healthy People, Healthy Communities, Healthy Tennessee."**

The Division of Health Planning appreciates the opportunity to serve the state through this work and looks forward to continuing its efforts to protect, promote, and improve the health and prosperity of the people of Tennessee in 2023.

Sincerely,

A handwritten signature in black ink that reads "Morgan McDonald". The signature is written in a cursive, flowing style.

Morgan McDonald, MD, FACP, FAAP
Commissioner

Enclosure: 2023 Annual Report of the Division of Health Planning
MM/mhp



The State of Health in Tennessee

2023 Annual Report to the 113th Tennessee General Assembly

Tennessee Department of Health | DIVISION OF HEALTH PLANNING | January 2023

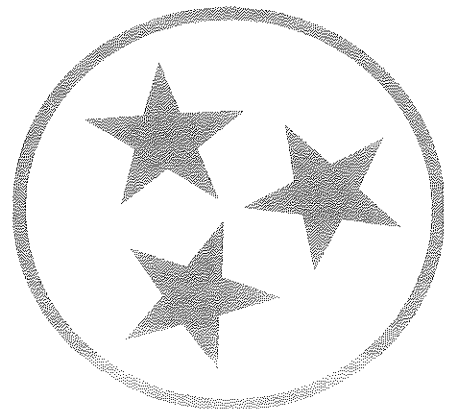


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Executive Summary

Introduction

The Division of Health Planning (the Division) was created by the General Assembly and is tasked with multiple responsibilities that assist the Tennessee Department of Health (TDH or the Department) in its vision “To protect, promote and improve the health and prosperity of people in Tennessee.” These responsibilities include drafting the State Health Plan, reviewing Certificate of Need, creating the State Oral Health Plan, receiving and evaluating Joint Annual Reports, and assisting in monitoring the Certificate of Public Advantage. The Division is tasked with providing an annual report to the General Assembly and annually reviewing the health status of Tennesseans. This State of Health Report serves to provide the General Assembly with a comprehensive overview of health in the state including health outcomes of individuals and information on the health of the state’s healthcare system. This report provides a data-based roadmap to guide recommendations to be included in future State Health Plans.

State Health Plan Framework

The framework of the State Health Plan focuses on the social determinants of health and integrating the cross-cutting themes of health equity and economic efficiency. This State Health Plan will seek to address four key areas:

1. A Healthy Start: What is the state of health among Tennessee’s children and youth? How can we ensure Tennesseans are able to have “A Healthy Start” in life?
2. A Healthy Life: What is the state of health among Tennessee’s adults and older adults? How can we promote Tennesseans’ health across the lifespan?
3. A Healthy Environment: What is the state of health in Tennessee’s communities? How can we ensure Tennesseans are able to thrive where they live, work, and play?
4. A Healthy System of Care: What is the state of Tennessee’s healthcare system? How can we ensure Tennesseans have access to quality and affordable healthcare when they need it?

The Current State of Health in Tennessee

After meeting with over 50 staff members across multiple internal Department divisions and offices, sister state agencies, and organizations outside of state government, a list of 103 metrics was compiled to answer the question “How Healthy is Tennessee?” This report details the 33 metrics used to assess A Healthy Start, 35 metrics used to assess A Healthy Life, 19 metrics used to assess A Healthy Environment, and 16 metrics used to assess A Healthy System of Care. By creating a data-based understanding of the state of health in Tennessee, this report will provide the General Assembly with the annual review on the health status of Tennesseans and support the work of the State Health Plan to create informed and actionable recommendations on how to improve health.

State of Health Metric Overview				
A Healthy Start				
Children in Poverty	Child Food Insecurity	WIC Coverage	SNAP Participation	Foster Care Instability
Child Care	School Nurses	School Counselors	Third Grade Reading Level	ACEs
Physical Dating Violence	Carried a Gun	Childhood Vaccinations	HPV Vaccinations	Congenital Syphilis
Youth Obesity	Asthma	Electronic Vapor Usage	Drugs on School Property	Hopelessness
Suicide Attempt	Suicide Mortality	Prenatal Care	Smoking During Pregnancy	Preterm Births
Low Birthweight	Breastfeeding	Postpartum Depression	Infant Mortality	Pregnancy-Related Mortality
Pregnancy-Associated, but not related, deaths	Teen Births			
A Healthy Life				
Per Capita Personal Income	Adult Poverty	Food Insecurity	Poverty and the Labor Force	Unemployment
Workplace Benefits	Fatal Occupational Injuries	Adult Numeracy	Adult Literacy	Violent Crime
Domestic Violence	Chlamydia	HIV	Hepatitis C	COVID-19 Vaccinations
Influenza Vaccinations	Chronic Conditions	Adult Smoking	Physical Activity	Diabetes
Binge Drinking	Nonfatal Drug Overdose	Fatal Drug Overdose*	Frequent Mental Distress	Suicidal Ideation
Suicide Attempt	Suicide Mortality	Premature Death	65+ Poverty	Grandparents Raising Grandchildren
Elder Abuse	Social Isolation	Falls 65+	Caregiving	Dementia
A Healthy Environment				
Severe Housing Problems	Severe Housing Cost Burden	Homelessness	Broadband Access	Access to Parks and Greenways
Transportation Disadvantaged Communities	Access to Vehicle	Driving Alone to Work	Long Commute-Driving Alone	Roadway Safety
Voter Participation	Civic Organizations	Social Advocacy Organizations	Volunteering	Water Quality
Community Water Fluoridation	Air Pollution-Particulate Matter	Heat Related ED Visits	Heat Related Hospitalizations	
A Healthy System of Care				
Uninsured Adults	Uninsured Children	Underinsured Children	Avoided Care Due to Cost	Adults with Disabilities who Avoided Care Due to Cost
Hospital Closures	Hospital Quality	Preventable Hospitalizations	Breast Cancer Screenings	Colorectal Cancer Screenings
Primary Care Health Professional Shortage Areas	Mental Health Professional Shortage Areas	Dental Health Professional Shortage Areas	Nurses	Palliative Care
Home Health Care				

Division of Health Planning, Introduction, and 2022 Year in Review

The Division of Health Planning (the Division) was created by the General Assembly and is tasked with multiple responsibilities that assist the Tennessee Department of Health (TDH or the Department) in its vision “To protect, promote and improve the health and prosperity of people in Tennessee.” These responsibilities include drafting the State Health Plan, reviewing Certificate of Need, creating the State Oral Health Plan, receiving and evaluating Joint Annual Reports, and assisting in monitoring the Certificate of Public Advantage.

Background on the Division of Health Planning

Recognizing the need for the state to coordinate its efforts to improve the health and welfare of the people of Tennessee, the General Assembly passed Public Chapter 0942 in 2004 (Appendix A). This act created a Division of Health Planning that was charged with three primary roles.

- **Create a State Health Plan** that:
 - guides state health care programs and policies, and
 - guides the allocation of state health care resources.
- **Provide policy guidance** to:
 - respond to requests for comment and recommendations for health care policies and programs, and
 - review and comment on federal laws and regulations.
- **Assess health resources and outcomes** to:
 - conduct an ongoing evaluation of Tennessee’s resources for accessibility,
 - review the health status of Tennesseans, and
 - involve and coordinate functions with such State entities as necessary to ensure the coordination of State health policies and programs.

Additionally, the Division is tasked with providing an annual report to the General Assembly and annually reviewing the health status of Tennesseans. This State of Health Report serves to provide the General Assembly with a comprehensive overview of health in the state including health outcomes of individuals and information on the health of the state’s healthcare system.

The State Health Plan also utilizes the Five Principles for Achieving Better Health that are informed by Tennessee law. The Five Principles are as follows:

1. **Healthy Lives:** The purpose of the State Health Plan is to improve the health of the people in Tennessee.
2. **Access:** Every citizen should have reasonable access to health care.
3. **Economic Efficiencies:** The State’s health and health care resources should be developed to address the needs of Tennesseans while encouraging competitive markets, economic efficiencies, and the continued development of the State’s health care system.
4. **Quality of Care:** Every citizen should have confidence that the quality of health care is continually monitored, and standards are adhered to by providers.
5. **Workforce:** The state should support the development, recruitment, and retention of a sufficient and quality health and health care workforce.

In addition to these statutorily directed responsibilities, the Division has, over time, been awarded the opportunity to work in additional spaces in service to the Department and the state, including the Joint Annual Reports, Certificate of Public Advantage, and several other areas as needed.

State Health Plan Overview

Over the past two years, the Division has revisited the development and content of the State Health Plan and formed a new guiding framework and creation process. While the Plan continues to serve as an external-facing tool to compliment the Department's strategic plan, these changes ensure the Plan is a useful tool for the Department's public and private partners moving forward.

The goals of the updated State Health Plan are:

- Promote the Department's Vision: "Healthy People, Healthy Communities, Healthy Tennessee."
- Create opportunities for external partners to align with the mission and vision of the Department.
- Provide state leadership with information on the health status of Tennessee and use high quality data to set priorities and inform actionable recommendations.
- Collaborate with and support state-level partners including, state agencies, non-profits, safety-net providers, faith-based institutions, healthcare facilities and providers, and associations.

State Health Plan Framework

The newly developed framework of the State Health Plan focuses on the social determinants of health and integrating the cross-cutting themes of health equity and economic efficiency. The new State Health Plan will seek to address four key areas:

1. A Healthy Start: What is the state of health among Tennessee's children and youth? How can we ensure Tennesseans are able to have A Healthy Start in life?
2. A Healthy Life: What is the state of health among Tennessee's adults and older adults? How can we promote Tennesseans' health across the lifespan?
3. A Healthy Environment: What is the state of health in Tennessee's communities? How can we ensure Tennesseans are able to thrive where they live, work, and play?
4. A Healthy System of Care: What is the state of Tennessee's healthcare system? How can we ensure Tennesseans have access to quality and affordable healthcare when they need it?

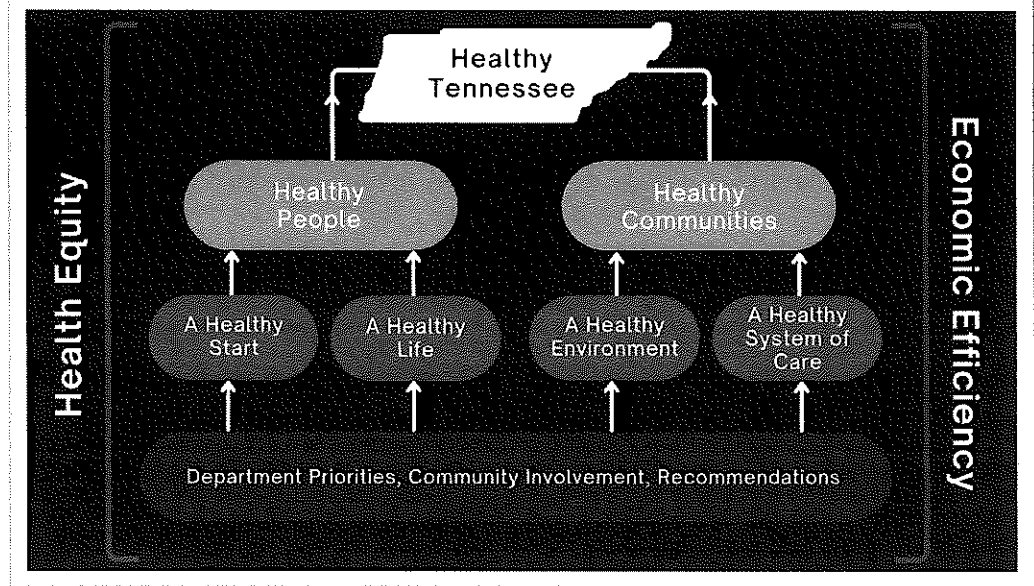
Health Equity

The Center for Disease Control ("CDC") defines health equity as "the state in which everyone has a fair and just opportunity to attain their highest level of health." The Department's office of Health Disparities Elimination seeks to guide the Department's work towards achieving health equity and addressing health disparities, defined as "preventable differences in the burden of disease, injury, violence, or opportunities to achieve optimal health that are experienced by populations that have been disadvantaged by their social or economic status, geographic location, and environment."¹

¹ Center for Disease Control, *Health Disparities*, accessed December 2017 at <http://www.cdc.gov/healthdisparities/about/index.html>; *Health Disparities*, *2016-2017*, *2016-2017 Health Disparities Report*, page 1, 43-44.

Health equity has been a part of the Department's greater Strategic Plan for years as well as other department initiatives, some of which are detailed in the most recent State Health Plan.² As the metrics assessed in the State of Health report are showcased online, data dashboards will expand on health disparities through use of race and ethnicity data, rural and urban data, data on special populations such as older

adults and persons with disabilities, and more. Through sharing this foundational knowledge on health disparities and working with the Department's Office of Health Disparities Elimination, the State Health Plan seeks to ensure that the opportunity to live a healthy life is accessible for all Tennesseans.



Economic Efficiency

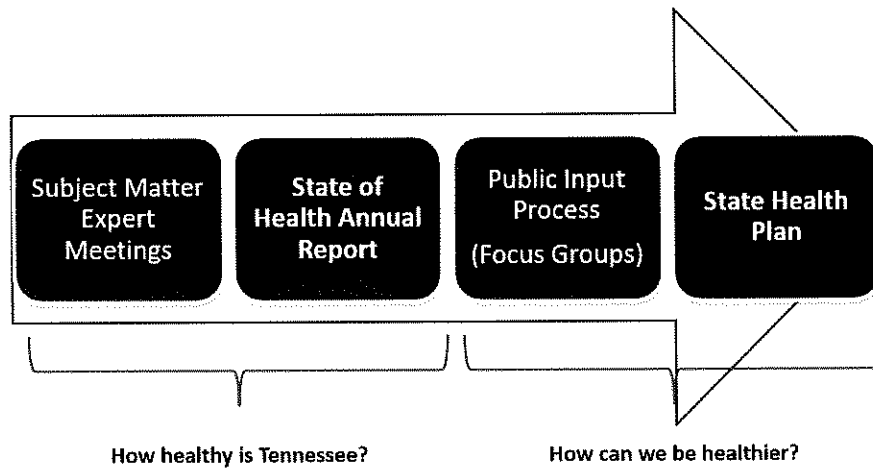
As detailed by the Five Principles for Achieving Health outlined in statute, “the State’s health and health care resources should be developed to address the needs of Tennesseans while encouraging competitive markets, economic efficiencies, and the continued development of the State’s health care system.” Economic efficiency and fiscal responsibility are integral to the functioning of the Tennessee Department of Health and Tennessee State Government. The 2021-2022 State Health Plan detailed how the Department used new COVID-19 related funding efficiently and effectively to meet the needs of Tennesseans. Future State Health Plans will further build on these principles by having data and evidence-informed recommendations for how to improve health in Tennessee.

² <https://www.tn.gov/health/health-plan>

³ To view past editions of the Tennessee State Health Plan visit: <https://www.tn.gov/health/health-program-areas/state-health-plan.html>

Role of the State of Health Report

The revised State Health Plan development process aims to be more inclusive and further partnerships to increase the useability of the Plan. Throughout 2022, the Division met with over 50 staff members across multiple internal Department divisions, sister state agencies, and organizations outside of state government to discuss how to measure health (Appendix B). In these subject matter expert meetings, discussions focused on selecting data for inclusion in this first annual State of Health Report. The State of Health Report uses over 100 metrics to assess the health status of the State. This assessment



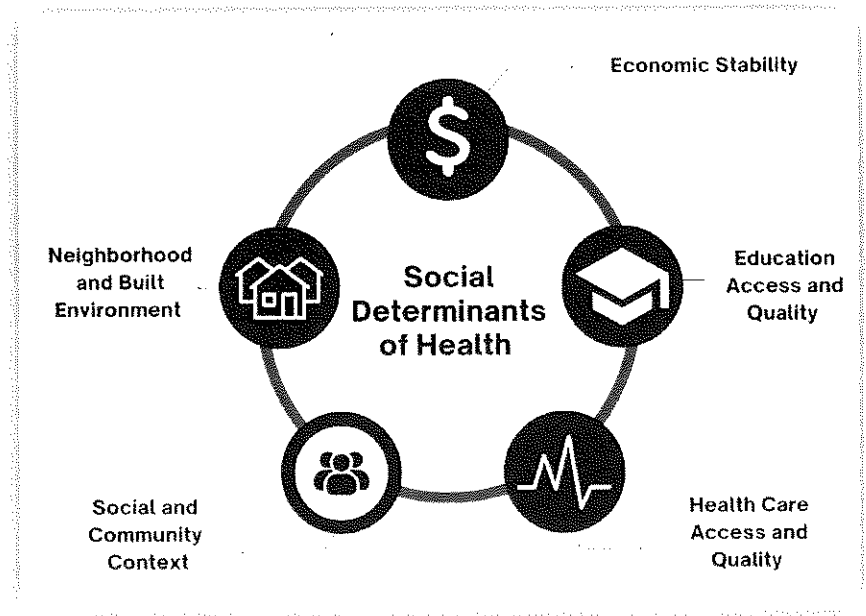
will be used to inform focus groups who will craft actionable recommendations for inclusion in the upcoming 2-year State Health Plan. The Division will work with partners across the state to build cross-sector collaboration and alignment to ensure these priorities and recommendations represent the needs of all Tennesseans and effectively target the social determinants of health that impact health outcomes in the state.

Social Determinants of Health

In its early years, the State Health Plan focused primarily on the allocation of health care resources. However, recognizing the significant impact that “upstream” prevention efforts have on improving the health outcomes of Tennesseans, the State Health Plan shifted to a focus on population health improvement, highlighting the first principle for achieving better health:

The purpose of the State Health Plan is to improve the health of the people in Tennessee.

The updated State Health Plan framework continues to focus on upstream prevention efforts by incorporating social determinants of health (SDOH) throughout the framework. SDOH contribute to the health of individuals and the population, and include economic stability, education access and quality, health care access and quality, social and community context, and neighborhood and built environment.³ By focusing upstream on



³ Health, People 2030, Social Determinants of Health, Accessed December 2022 from <https://health.people2030.org/health/people/priorities/social-determinants-of-health>

the SDOH the Department can build cross-sector collaboration to directly address the factors that most impact health outcomes.

The Current State of Health in Tennessee

As outlined in statute, the State Health Plan must “review the health status of Tennesseans” while “assessing health resources and outcomes.” Guided by subject matter expert meetings and the Department’s Vision, “Healthy People, Healthy Communities, Healthy Tennessee,” the State of Health report assesses the health status of Tennesseans across the four areas of the State Health Plan Framework: A Healthy Start, A Healthy Life, a Healthy Environment, and a Healthy System of Care. In total, the report considers over 100 metrics to assess the State of Health in Tennessee (Appendix C). The data detailed in the State of Health report will be used to craft informed and actionable recommendations in the upcoming State Health Plan.

Healthy People

The World Health Organization defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”⁴ Considering this definition and the role of social determinants of health in determining health outcomes, the metrics reviewing A Healthy People include not only disease incidence or mortality, but the factors that influence Tennesseans’ health and quality of life. Through wholistically assessing both existing health challenges and the circumstances surrounding those challenges, a path for improving health can be forged.

A Healthy Start





To assess if Tennessee’s children and youth are having a healthy start in life, the State of Health report considers metrics across three areas: social determinants of health such as poverty and education, health behaviors and conditions such as vaccination and mental health, and specific metrics around pregnancy and childbirth.

A Healthy Start				
Children in Poverty	Child Food Insecurity	WIC Coverage	SNAP Participation	Foster Care Instability
Child Care	School Nurses	School Counselors	Third Grade Reading Level	ACEs
Physical Dating Violence	Carried a Gun	Childhood Vaccinations	HPV Vaccinations	Congenital Syphilis
Youth Obesity	Asthma	Electronic Vapor Usage	Drugs on School Property	Hopelessness
Suicide Attempt	Suicide Mortality	Prenatal Care	Smoking During Pregnancy	Preterm Births
Low Birthweight	Breastfeeding	Postpartum Depression	Infant Mortality	Pregnancy-Related Mortality
Pregnancy-Associated, but not related, deaths	Teen Births			

⁴ World Health Organization. Accessed December 2021 from <https://www.who.int/about/who-we-are/constitution>

⁵ <https://www.who.int/news-room/feature-stories/detail/what-is-health>

Poverty and Food Insecurity

- In 2021, 18.1% of Tennessee's children were **Children in Poverty**.⁵ 
- In 2020, 7.30% of TN households with children had children who were **Food Insecure**.⁶ 
- From 2017-2020, less than 30% of children eligible for **WIC** in Tennessee received WIC benefits.⁷ 
- In 2018, 90% of Tennesseans who were eligible for **SNAP** were receiving benefits.⁸ 

Child poverty is associated with chronic illness, environmental exposure and overall “lifelong hardship.”⁹ The percent of **Children in Poverty** in Tennessee and the United States has decreased since 2017. In 2020, 18.1% of Tennessee’s children were living below the poverty level compared to 16.9% in the United States.¹⁰ Poverty also leads to poor nutrition and **Child Food Insecurity**. According to a 2019 study, “children in food-insecure households had rates of lifetime asthma diagnosis and depressive symptoms that were 19.1% and 27.9% higher, rates of foregone medical care that were 179.8% higher, and rates of emergency department use that were 25.9% higher.”¹¹ In 2020, 7.30% of TN households with children had children who were food insecure, compared to 6.77% in the United States.¹²

Programs that seek to combat the impacts of poverty and food insecurity include the Special Supplemental Nutrition Program for Women, Infants, and Children (**WIC**) and Special Nutrition Assistance Program (**SNAP**). Despite being eligible, many families may not access the benefits offered through these programs. Child WIC coverage is defined as the percentage of children ages 1-4 eligible for the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) who received WIC benefits in an average month. From 2017-2021, Tennessee had a lower percentage of eligible children receiving WIC benefits compared to the United States. Across all years, less than 30% of children eligible for WIC in Tennessee received WIC benefits.¹³ Overall WIC Coverage, defined as the percentage of women, infants and children eligible for WIC who received WIC benefits, was below 50% across all years. Only 37.4% of all persons eligible for WIC received WIC benefits

Across all years, less than 50% of children eligible for WIC received WIC benefits.

United States Census Bureau. 2015-2019 American Community Survey 1-Year Public Use Database.
United States Department of Agriculture, Economic Research Service. Current Population survey, Food Security Supplement, 1-Year Public Use Database
2017-2021. Retrieved from IPEDS/CPS, University of Minnesota, www.ipeds.org and USDA, ERS www.ers.usda.gov

United States Department of Agriculture Food and Nutrition Service. National and State Level Estimating of WIC Eligibility and Program Reach in 2020.
Retrieved from National and State Level Estimating of WIC Eligibility and Program Reach in 2020. Food and Nutrition Service, n.d. b. c.

United States Department of Agriculture Food and Nutrition Service. Retrieved from www.ers.usda.gov

Guerrero, IV and L. Potosi, and Child Health in the United States. *Current Evidence in Practice: Pediatrics* 2016; 137: 1-15. 2016; 137.
<https://doi.org/10.1016/j.peds.2016.03.019>

United States Census Bureau. 2015-2019 American Community Survey 1-Year Public Use Database.
United States Department of Agriculture, Economic Research Service. Current Population survey, Food Security Supplement, 1-Year Public Use Database
2017-2021. Retrieved from IPEDS/CPS, University of Minnesota, www.ipeds.org and USDA, ERS www.ers.usda.gov

United States Department of Agriculture Food and Nutrition Service. National and State Level Estimating of WIC Eligibility and Program Reach in 2020.
Retrieved from National and State Level Estimating of WIC Eligibility and Program Reach in 2020. Food and Nutrition Service, n.d. b. c.

in an average month in 2020. Participation in SNAP in Tennessee was higher than WIC. In 2018, 90% of Tennessee who were eligible for SNAP were receiving benefits compared to 82% in the United States.¹⁴

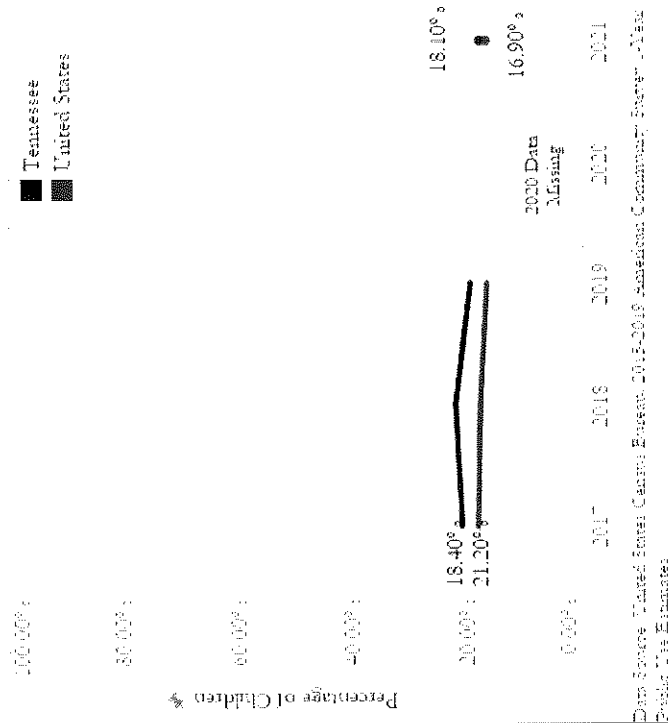
¹⁴ United States Department of Agriculture Food and Nutrition Service, Retrieved from www.fns.usda.gov

¹⁵ <https://www.fns.usda.gov/snap/eligibility>

Children in Poverty

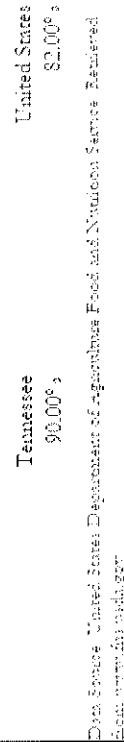
Percentage of all persons under 18 years of age whose income in the past 12 months is below the poverty level.

The number of children living in poverty in Tennessee declined between 2017-2021, but remained above the United States average.



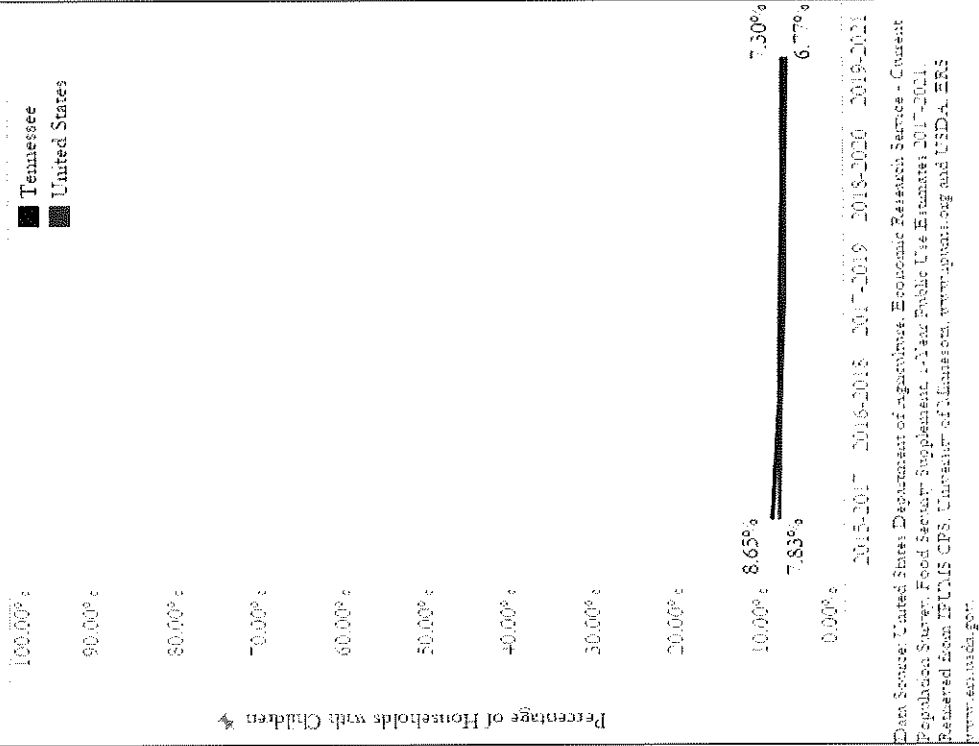
SNAP Participation

Percentage of people who were eligible for SNAP who actually participated in the program in 2018.



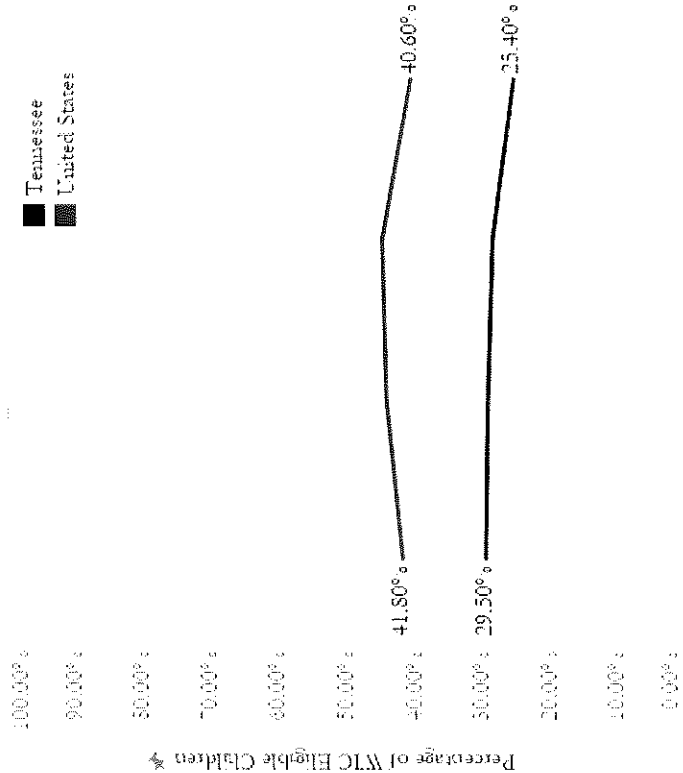
Food Insecurity in Children

Percentage of households with children who are food insecure (low or very low food security status).



Child WIC Coverage

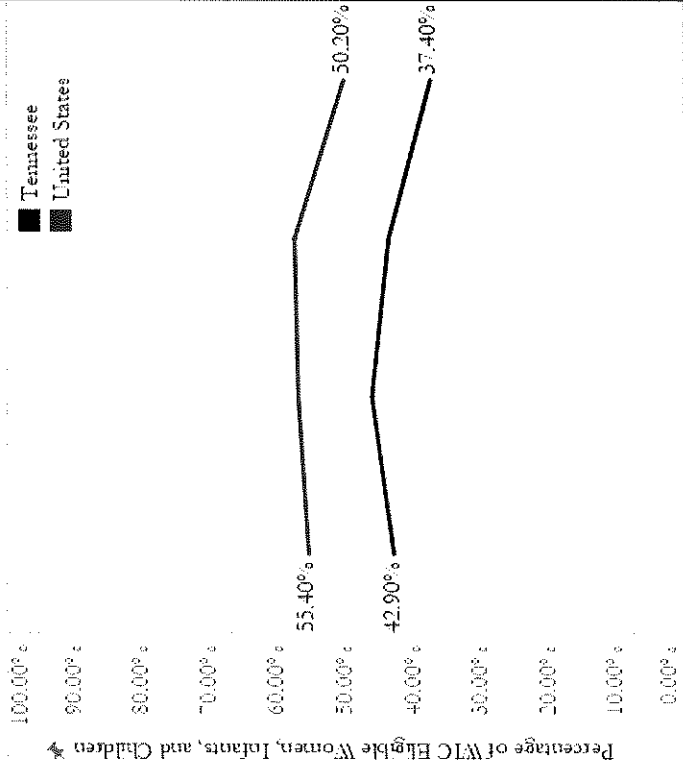
Percentage of children ages 1-4 eligible for the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) who received WIC benefits in an average month.



Data Source: United States Department of Agriculture Food and Nutrition Service, National and State Level Estimates of WIC Eligibility and Program Reach in 2020. Retrieved from National and State Level Estimates of WIC Eligibility and Program Reach at 2020 Food and Nutrition Service, <https://www.fns.usda.gov>.






Overall WIC Coverage

Percentage of women, infants, and children eligible for the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) who received WIC benefits in an average month.



Data Source: United States Department of Agriculture Food and Nutrition Service, National and State Level Estimates of WIC Eligibility and Program Reach in 2020. Retrieved from National and State Level Estimates of WIC Eligibility and Program Reach at 2020 Food and Nutrition Service, <https://www.fns.usda.gov>.

Child Care Systems and Education

- In 2020, Tennessee had the highest **Foster Care Instability** in the nation.¹⁵ 
- In 2022, only 23.1% of Tennessee counties had **Child Care** facilities licensed through DHS that offered a sliding fee scale.¹⁶ 
- During the 2021–2022 school year, only 45% of nonpublic schools reported having a **School Nurse** compared to 81% of public schools.¹⁷ 
- In the 2020–2021 school year, 82% of Tennessee schools met the recommendation of one **School Counselor** per 500 students.¹⁸ 
- In 2021, 32.2% of Tennessee public school students in grade 3 were reading at the **Third Grade Reading Level**.¹⁹ 

In 2020, Tennessee had the highest **Foster Care Instability** in the nation. Foster care instability is defined as the percent of children in foster care with three or more placements within 12 months. Children in foster care who experience instability are more likely to develop behavioral issues such as difficulty forming attachments and low self-esteem.²⁰ Since 2016, around 31% of children in Tennessee’s foster care system have experienced this instability, compared to only 15% in the United States.²¹ In 2020, 33.7% of children in Tennessee’s foster care system were placed 3 or more times in a year, the highest in the nation. By comparison, foster care instability in the lowest states, Nebraska and Rhode Island, only affected 9.1% of children in foster care.

Child Care availability, capacity, and cost are significant barriers to Tennessee families and may impact a parent’s ability participate in the labor force. An analysis by the Economic Policy Institute in 2020 showed that infant care in Tennessee

76.8% of TN counties do not have a DHS licensed child care facility that offer a sliding fee scale.

costs approximately 16.7% of median family income (\$52,325).²² Depending on income, parents may be priced out of accessing child care altogether. In Tennessee, the median child care worker salary is \$19,760 and annual child care costs \$8,732. Therefore, if a child care worker sought care for their own child, they would spend 44.2% of their salary on child care. One way to

¹⁵ United States Department of Health and Human Services, “Child Welfare Overview: Report Data,” Accessed via America’s Health Rankings. “Licensed child care facility,” accessed on December 2, 2022 on the Tennessee Department of Human Services’ website. Population calculated with US Census built census data using 2013 data.

¹⁶ Tennessee’s Coordinated School Health Annual Report, Report, Retrieved from www.tn.gov/education

¹⁷ Tennessee’s Coordinated School Health Annual Report, see “Recommended student resources for mathematics, science, and civics for 1st and 2nd grade,” and “the composition is not available.”

¹⁸ 1st grade: Tennessee Department of Education, “1st grade,” accessed via Tennessee Department of Education and Progress (TN MEP), Report Card, Reading, State Achievement Level Results. Retrieved from www.tn.gov/education

¹⁹ Robert DME, OPR, Dr. M. Larry S. Fuchs, AR. The impact of placement stability on behavioral well-being for children in foster care. Pediatrics, 2007.

1st, 11/19/21, 136, 41. Data for 11/12, 136, 2006, 1, 915. PMID: 17272621, PNI HD: PNI, 2003, 106.

²⁰ United States Department of Health and Human Services, “Child Welfare Overview: Report Data,” Accessed via America’s Health Rankings. Tennessee’s Coordinated School Health Annual Report, 2020, Report Card, State Achievement Level Results.

mitigate cost of child care for families is through use of a sliding fee scale, whereby costs are reduced based on income. Only 23.1% of Tennessee counties have child care facilities licensed through DHS that offer a sliding fee scale and capacity of these facilities is limited. Of all the children in Tennessee that DHS licensed facilities have capacity to serve, only 13.9% would have access to a sliding fee scale.²³ In addition to access and affordability and quality child care positively impacting families economically, participation in quality child care and early education programs can result in health benefits for children. Such benefits may include improvements in blood-pressure, reduction in smoking as adults, and reduction in depression throughout childhood and adulthood.²⁴

According to the TN Department of Education, "**School Nurses** provide services such as assessment, planning, care-coordination, critical thinking skills, quality improvement, health education and promotion which benefit schools, families, and children with acute and chronic health conditions." Nonpublic schools are not required to provide a licensed health care provider. During the 2021-2022 school year, only 45% of nonpublic schools reported having a school nurse compared to 81% of public schools.²⁵ **School Counselors** play an important role in meeting the mental and emotional needs of children in Tennessee schools. Recommended student to counselor ratio varies by state with Tennessee's standard being one certified counselor per 500 students. In the 2020-2021 school year, 82% of Tennessee schools met this recommendation.²⁶

Tennessee has assessed **Third Grade Reading Level** as both a measure of health and education for years. Literacy level impacts everything from lifetime earning potential to adherence to medical advice.²⁷ In 2021, 32.2% of Tennessee public school students in grade 3 tested "on track" or "mastered" for English Language Arts on TN Ready tests.²⁸ Nationally 4th grade reading level is used to compare testing. In 2022, 30% of Tennessee 4th graders were reading proficiently compared to 32% in the United States overall. Reading proficiency in Tennessee and the United States have decreased in part due to COVID-19 related impacts.

²³ Licensed children's facility list accessed on December 2, 2022 on the Tennessee Department of Human Services website. Population calculated within Tullahoma health environment using 2023 Mapbox Data.

²⁴ The Effects of Early Care and Education on Children's Health, "Health Affairs Health Policy Brief," April 25, 2019, DOI: 10.1177/10439862198539221

²⁵ Tennessee Coordinated School Health Annual School Health Services Report, Retrieved from www.tn.gov/education

²⁶ Tennessee Coordinated School Health Annual Report Note: Recommended student to counselor ratio varies by state and therefore U.S. and state comparison is not available.

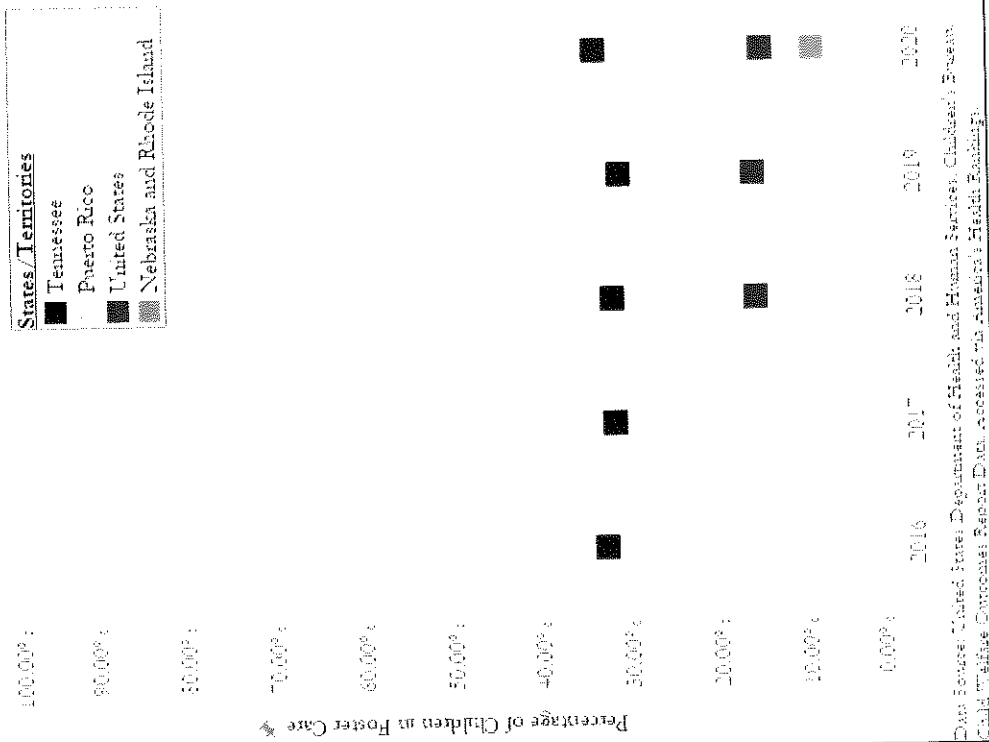
²⁷ TN Dept of Health, 3rd Grade Reading Level, Accessed December 9, 2022 <https://www.tn.gov/health/health-programs/areas-of-focus/early-childhood/early-childhood-education-and-grade-readiness.html>

²⁸ 3rd grade: Tennessee Department of Education, 4th grade: National Assessment of Educational Progress (NAEP) Report Card Reading, State Achievement Level Results, Retrieved from www.naepreportcard.gov

Foster Care Instability

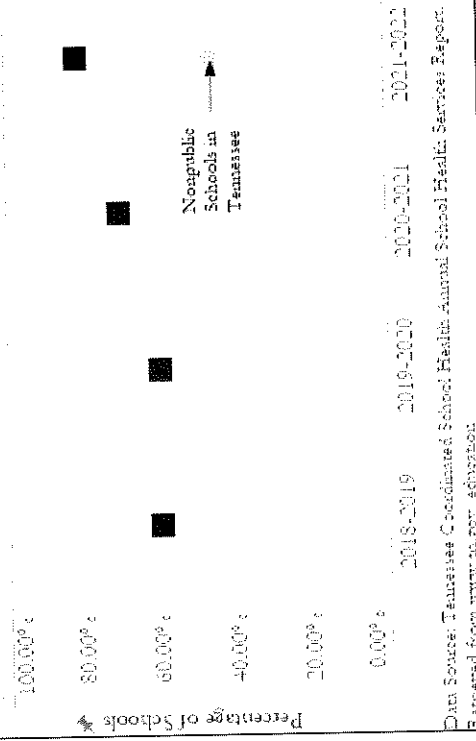
Percentage of children in foster care with three or more placements within 12 months.

In 2020, Tennessee (33.7%) had the highest foster care instability in the nation, Puerto Rico (25.9%) had the second highest, and Nebraska and Rhode Island (9.1%) had the lowest. Since 2018, foster care instability in Tennessee has been about twice as high as foster care instability in the United States.



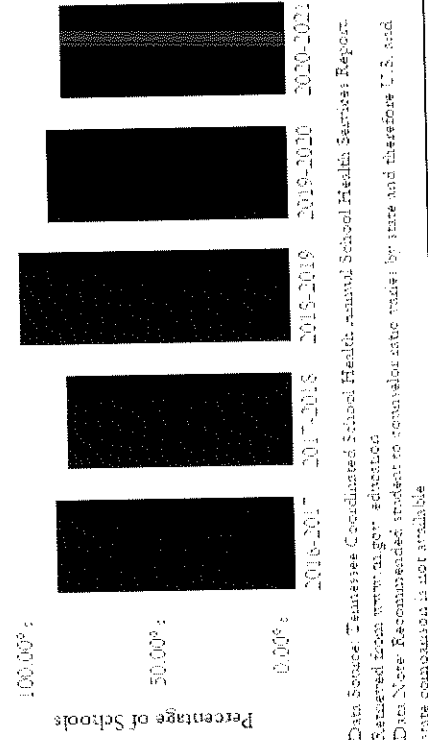
School Nurses

Percentage of Tennessee Public Schools employing a full-time nurse. Nonpublic schools are not required to provide a licensed health care provider. During the 2021-2022 school year, only 45% of nonpublic schools reported having a school nurse compared to 81% of public schools.



School Counselors

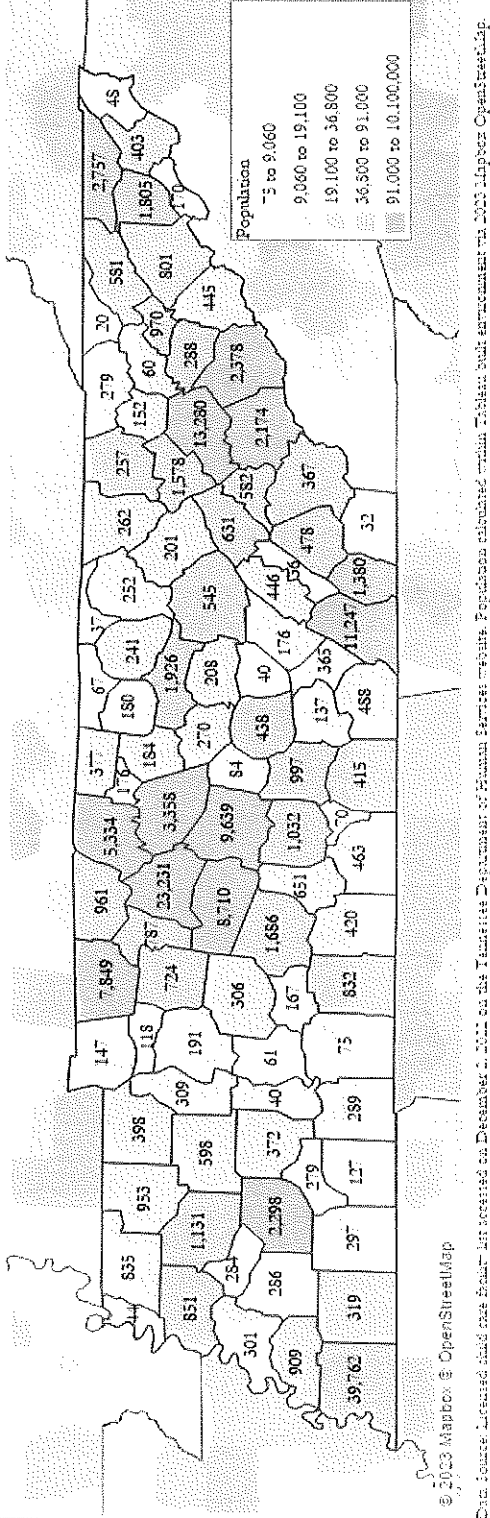
Percentage of public school districts in Tennessee with one certified counselor per 500 students.



Capacity of Licensed Child Care Facilities

Number of children DHS licensed child care facilities have capacity to serve in 2022.

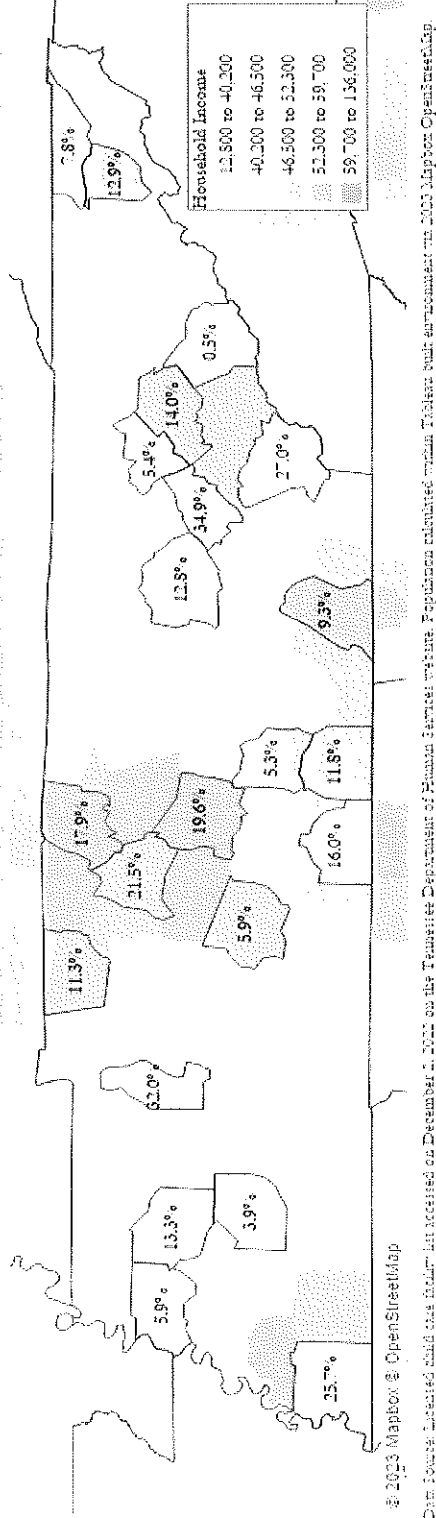
As an example, in total Gibson County, licensed child care facilities have the capacity to serve 1,131 children. Gibson County's total population is between 36,800 and 91,000 people.



Child Care Sliding Fee Scale

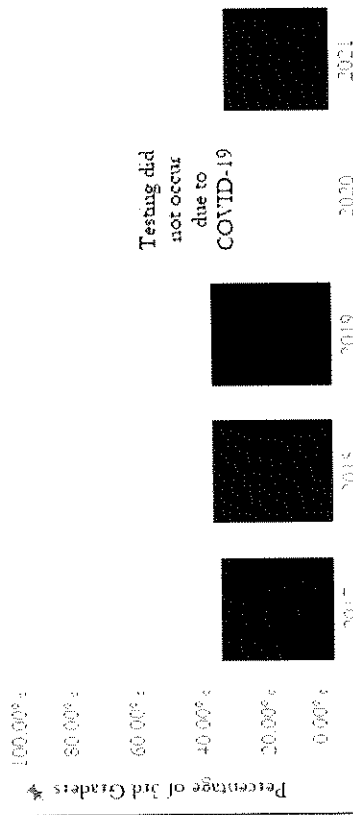
Percentage of children attending a DHS licensed child care facility with access to a sliding fee payment scale in 2022.

Only 25.1% of Tennessee counties have child care facilities licensed through DHS that offer a sliding fee scale and capacity of these facilities is still limited. Of all the children in Tennessee that DHS licensed facilities have capacity to serve, only 13.9% would have access to a sliding fee scale. As an example, if all Shelby County licensed child care facilities are at full capacity, 25.7% of children attending will have access to a sliding fee payment scale. Shelby County's median annual household income is between \$46,500 and \$52,300.



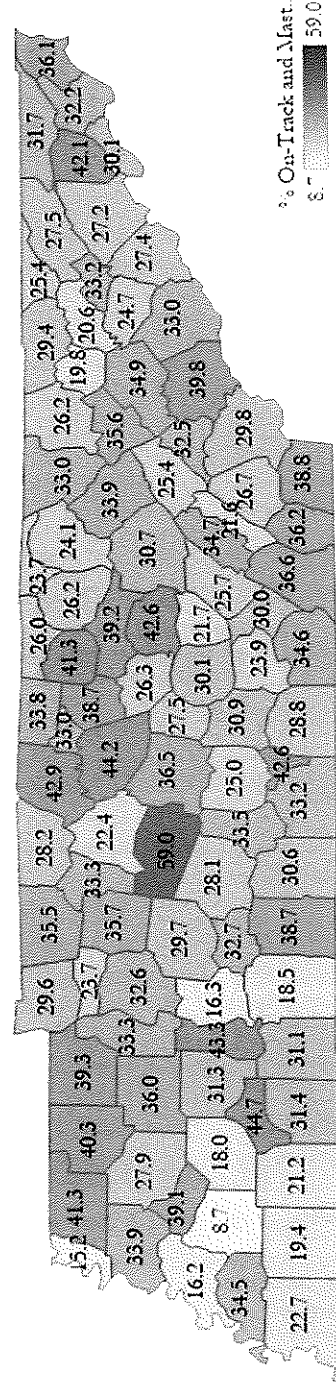
3rd Grade Reading Level

Percentage of public school students in Tennessee in grade 3 that test "on track" and "mastered" for English Language Arts on TN Ready tests. Nationally 4th grade reading level is use to compare testing. In 2022, 30% of Tennessee 4th graders were reading proficiently compared to 32% in the United States overall. Reading proficiency in Tennessee and the United States has decreased in part due to COVID-19 related impacts.






3rd Grade Reading Level in 2021

Percentage of public school students in Tennessee in grade 3 that test "on track" and "mastered" for English Language Arts on TN Ready tests.



Trauma and Youth Safety

- In 2019, 18.7% of children experienced two or more **Adverse Childhood Experiences**²⁹ 
- In 2019, the percent of youth who experienced **Physical Dating Violence** in Tennessee (13.8%) was statistically higher than in the United States (8.2%).³⁰ 
- In 2017 and 2019, the percent of high school students who **Carried a Gun** for a purpose outside of hunting or sport in Tennessee (8.1%) was statistically higher than the in the United States (4.4%).³¹ 

Adverse Childhood Experiences, or ACEs, are closely linked to health outcomes and socioeconomic status later in life. Adverse Childhood Experiences may include but are not limited to “experiencing violence, abuse or neglect; witnessing violence in the home or community; having a family member attempt or die by suicide; growing up in a household with substance use problems, mental health problems, or instability due to parents’ separation or incarceration of a household member.”³² Children with a higher number of ACEs are more likely to experience chronic health conditions, such as heart disease and depression, and negative impacts on lifetime earning potential. In 2019, 18.7% of children experienced two or more ACEs in Tennessee. From 2017-2019, ACEs in Tennessee were lower than in the United States.³³ Evidence is emerging on how positive childhood experiences (PCEs) act as protective factors against the health effects of ACEs and contribute to overall positive child well-being.³⁴ Positive childhood experiences include: being able to talk with family about feelings, feeling that family stood by during difficult times, enjoying participating in community traditions, feeling a sense of belonging in high school, feeling supported by friends, having at least two non-parent adults who take a genuine interest, and feeling safe and protected by an adult in the home. In 2021, 78.16% of Tennesseans had 5-7 positive childhood experiences.³⁵

Further violence as children age impacts health including **Physical Dating Violence**. Physical dating violence is defined as being physically hurt on purpose through things such as being hit, slammed into something, or injured with an object or weapon by someone they were dating or going out with. According to the CDC, youth who are victims of dating violence are more likely to “experience depression and anxiety, engage in unhealthy behaviors such as using drugs or alcohol, exhibit antisocial behaviors like bullying, and think about suicide.”³⁶ In 2019, the percent of youth who were dating someone and experienced physical dating violence in Tennessee (13.8%) was statistically higher than in the United States (8.2%).³⁷

Access to lethal means, including guns, should be considered when assessing a child’s risk of harm to self or others. In 2017 and 2019, the percent of high school students who **Carried a Gun** for a purpose outside of hunting or sport in Tennessee

²⁹ National Survey of Children’s Health, Retrieved from www.childhealthdata.org

³⁰ Centers for Disease Control, Youth Risk Behavior Surveillance System

Centers for Disease Control, Youth Risk Behavior Surveillance System

CDC, Violence Prevention Facts, ACEs, Accessed December 2022 at <https://www.cdc.gov/violenceprevention/factsheets/factsheet.html>

National Survey of Children’s Health, Retrieved from www.childhealthdata.org

Centers for Disease Control, Counting Positive Childhood Experiences, Accessed January 2022 from <https://www.cdc.gov/health/childhood/positive-childhood-experiences/index.html>

³¹ TN Department of Health, Behavioral Health Risk Surveillance System, 2021.

³² CDC, Violence Prevention, Teen Dating Violence, Accessed December 2022 at

was statistically higher than the in the United States.³⁸ In Tennessee, 8.10% of high school students carried a gun, not counting days where a gun was carried for only hunting or a sport such as target shooting, compared to 4.40% in the United States. According to the TN Department of Health's Child Fatality Review, "In 2020, firearms in the home were the leading mechanism and location for youth suicide." Of the 70 firearm-related deaths among children, 6 were accidental, 20 were suicide, and 44 were homicide. More detailed information on firearm related deaths can be found in the annual Child Fatality Review report.³⁹

In 2022, the Tennessee Departments of Education, Mental Health and Substance Abuse Services, and Safety and Homeland security released a School Safety Toolkit for Tennessee Families. The Toolkit "covers how parents and families can report suspicious or concerning activity through the SafeTN App, access mental health resources for their student through programs administered by the Department of Mental Health & Substance Abuse Services and inquire about their child's school security compliance with Schools Against Violence in Education Act."⁴⁰

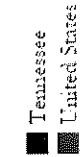
³⁸ Centers for Disease Control, Youth Risk Behavior Surveillance System.

³⁹ Tennessee Child Fatality Review Report, Child Fatality Review, <https://www.tn.gov/health/health-programs/child-fatality-review/review.html>.

⁴⁰ Toolkit for the Tennessee School Safety Toolkit, Tennessee Department of Education, <https://www.tn.gov/education/school-safety/school-safety-toolkit.html>.

Adverse Childhood Experiences

Percentage of children ages 0-17 who experienced two or more Adverse Childhood Experiences (ACEs). Children with a higher number of ACEs are more likely to experience chronic health conditions, such as heart disease and depression, and negative impacts on lifetime earning potential.



100.00%

90.00%

80.00%

70.00%

60.00%

50.00%

40.00%

30.00%

20.00%

10.00%

0.00%

Percentage of Children

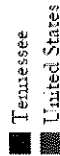


2017 2018 2019

Data Source: National Survey of Children's Health. Retrieved from www.childhealthdata.org

Carried a Gun

Percentage of high school students who carried a gun (on at least 1 day during the 12 months before the survey, not counting the days when they carried a gun only for hunting or for a sport such as target shooting). In 2017 and 2019, the percentage of students who carried a gun in Tennessee was statistically higher than the in the United States.



100.00%

80.00%

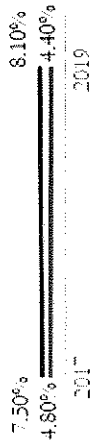
60.00%

40.00%

20.00%

0.00%

Percentage of Students



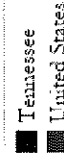
2017 2019

Data Source: Centers for Disease Control Youth Risk Behavior Surveillance System

Physical Dating Violence

Percentage of those who experienced physical violence (physically hurt on purpose such things as being hit, slammed into something, or injured with an object or weapon) by someone they were dating or going out with, one or more times during the 12 months before the survey, among students who dated or went out with someone during the 12 months before the survey.

In 2019, the percent of youth who experienced physical dating violence in Tennessee was statistically higher than the United States average.



100.00%

80.00%

60.00%

40.00%

20.00%

0.00%

Percentage of Youth



2017 2019

Data Source: Centers for Disease Control Youth Risk Behavior Surveillance System

Health Behaviors and Conditions

Infectious Disease

- 75.4% of children born in 2018 in both Tennessee and the United States received the recommended **Childhood Vaccinations** by age 35 months.⁴¹
- In 2020, 58.6% of adolescents in the United States had received the **HPV** vaccine compared to 52.9% in Tennessee.⁴²
- The rate of **Congenital Syphilis** in Tennessee increased from 8.7 cases per 100,000 live births in 2016 to 39.4 cases per 100,000 live births in 2020.⁴³

The 7-vaccine series recommended for all children protects against diphtheria, pertussis, tetanus, polio, measles, mumps, rubella, hepatitis B, Haemophilus influenza type b, varicella, and pneumococcal infections. From birth years 2015 to 2018, the percentage of children receiving the combined 7-vaccine series in Tennessee by age 35 months was highest for children born 2018 at 83.0% and lowest for children born in 2017 at 67.6%. In birth year 2018, 75.4% of children in both Tennessee and the United States received the recommended **Childhood Vaccinations**.⁴⁴ As children age, further vaccinations are recommended including the **Human Papillomavirus (HPV)** vaccination. HPV is the most common sexually transmitted infection (STI) in the United States and can lead to the development of genital warts and cancers of the cervix, vagina, vulva, penis, anus, and back of the throat (oropharyngeal).⁴⁵ The CDC recommends that all children aged 11-12 receive the HPV vaccine. Vaccination is recommended for anyone through age 26 if they are not vaccinated as a child. The percent of adolescents aged 13-17 receiving the HPV vaccination has increased in both Tennessee and the United States in recent years. However, Tennessee remains below the United States value. In 2020, 58.6% of adolescents in the United States had received the HPV vaccine compared to 52.9% in Tennessee.⁴⁶ The CDC has a “Vaccines for Your Children” webpage complete with a “Childhood Vaccine Quiz” so parents can determine what vaccines are recommended for their child.⁴⁷

An STI that specifically can impact children is syphilis. Syphilis during pregnancy can result in miscarriage, stillbirth, preterm delivery as well as congenital infection, where syphilis is passed from the mother to the child. **Congenital Syphilis** can result in lifelong disabilities, development delays, and death. The rate of congenital syphilis per 100,000 live births has drastically increased in the United States and in Tennessee in recent years. The number of pregnant patients with syphilis in Tennessee has increased fivefold between 2012 and 2021, but most congenital syphilis cases have been avoided through testing and treatment during pregnancy. In 2020, there were 39.4 congenital syphilis cases per 100,000 live births in Tennessee compared to 57.3 cases per 100,000 live births in the United States.⁴⁸

⁴¹ Centers for Disease Control and Prevention, National Immunization Services Child Birth Cohort, Accessed via CDC Child Vax View.

⁴² Centers for Disease Control and Prevention, National Immunization Services, Teen, Accessed via CDC Child Vax View.

⁴³ Department of Health Division of Communicable and Environmental Disease and Emergent, Preparedness and Response, STD surveillance Report, 2020.

⁴⁴ Centers for Disease Control and Prevention, National Immunization Services Child Birth Cohort, Accessed via CDC Child Vax View.

⁴⁵ Centers for Disease Control HPV Fact Sheet, April 2022, Accessed via Dec 2022 from <https://www.cdc.gov/std/hpv/fact-sheet/>

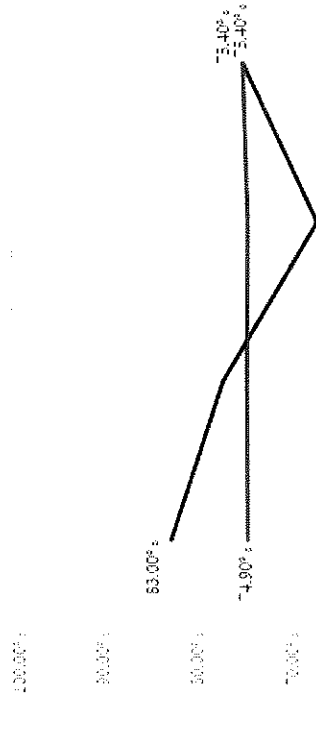
⁴⁶ Centers for Disease Control and Prevention, National Immunization Services Teen, Accessed via CDC Child Vax View.

⁴⁷ Centers for Disease Control, Vaccines for Your Children, <https://www.cdc.gov/vaccines/imz/downloads/>

⁴⁸ Department of Health Division of Communicable and Environmental Disease and Emergent, Preparedness and Response, STD surveillance Report, 2020.

Childhood Vaccinations

Percentage of children by birth year who received by age 35 months all recommended doses of the combined 7-vaccine series: diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine; measles, mumps and rubella (MMR) vaccine; poliovirus vaccine; Haemophilus influenzae type b (Hib) vaccine; Hepatitis B (HepB) vaccine; varicella vaccine; and pneumococcal conjugate vaccine (PCV).

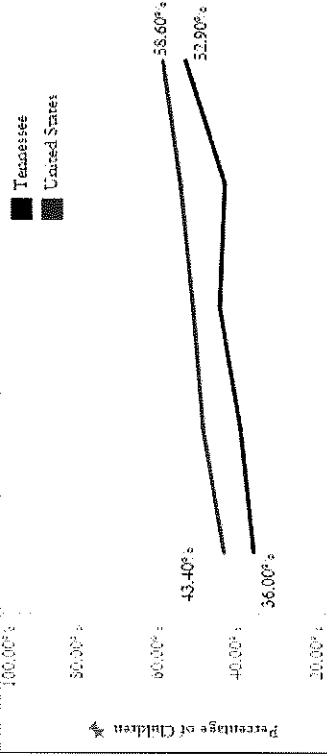


Percentage of Children

Data Source: Centers for Disease Control and Prevention, National Immunization Survey-Child, Birth Cohort, Accessed in CDC Child View.

HPV Vaccination

Percentage of adolescents ages 13-17 who received all recommended doses of the human papillomavirus (HPV) vaccine. The CDC recommends that all children aged 11-12 receive the HPV vaccination to protect against cancers of the cervix, vagina, vulva, penis, anus, and back of the throat (oropharyngeal).

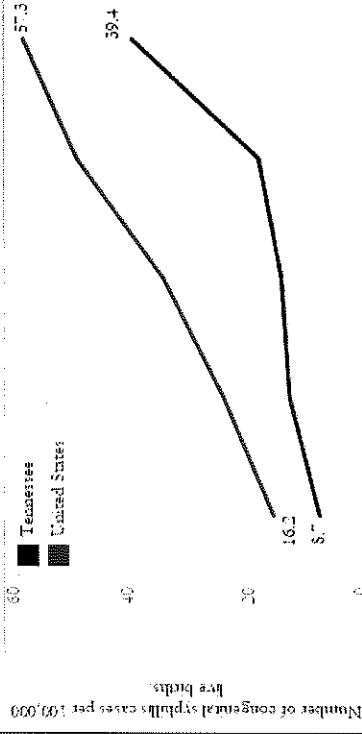


Percentage of Children

Data Source: Centers for Disease Control and Prevention, National Immunization Survey-Teen, Accessed in CDC Child View.

Congenital Syphilis

Number of congenital syphilis cases per 100,000 live births.



Number of live births

Data Source: TN Department of Health Division of Communicable and Environmental Disease and Emergency Preparedness; US CDC STD Surveillance Report, 2020.
Data Note: 2016-2019 TN rates are based on counts <20 and should be interpreted with caution.

Health Indicators

- In the United States, the prevalence of obesity in children aged 2-19 from 2017-2020 was 19.7%. In Tennessee, **Youth Obesity** has remained above 38% since 2012.⁴⁹
- In 2020-2021, 5.6% of children in Tennessee had Asthma.⁵⁰
- In 2019, 50.6% of high school students in Tennessee reported ever using **Electronic Vapor Products**.
- In 2019, 28.1% of Tennessee high school students were offered, sold, or given illegal **Drugs on School Property**.

In both 2017 and 2019, Tennessee's values were statistically higher than the United States' values.⁵¹

Youth Obesity can contribute to the development of health conditions such as Type 2 diabetes, high blood pressure, and joint pain.⁵² Obesity in both children and adults can be influenced by genetics, disease or medications, and the physical environment as well as behaviors such as eating, physical activity and sleep.⁵³ The TN Department of Education and TN Department of Health have monitored youth obesity for years through the Coordinated School Health (CSH) program which issues an annual Body Mass Index (BMI) Data Report.⁵⁴ Youth obesity in Tennessee is measured as “Percent of public-school students in Tennessee with a body mass index (BMI) greater than or equal to the 85th percentile for children of the same age and sex.” In Tennessee, youth obesity has remained above 38% since 2012.⁵⁵ In the United States, the prevalence of obesity in children aged 2-19 from 2017-2020 was 19.7%. Children who are overweight or obese are also more likely to have **Asthma**.⁵⁶ In 2020-2021, 5.6% of children in Tennessee had Asthma, compared to 6.9% in the United States.⁵⁷

The use of **Electronic Vapor Products** can expose users to nicotine and other harmful substances such as heavy metals, carcinogens, and ultrafine particles that can be inhaled deep into the lungs.^{58,59} Nicotine specifically can harm adolescent brain development. In 2019, the percentage of Tennessee high school students who reported ever using electronic vapor products was 50.6%, compared to 50.1% in the United States..⁶⁰ Accessing electronic vapor products and other substances including illegal drugs can occur on school property. In 2019, 28.1% of Tennessee high school students were offered, sold,

⁴⁹ Tennessee Department of Education Coordinated School Health Annual Body Mass Index Report

⁵⁰ National Survey of Children's Health Data - Department of Health and Human Services, Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB)

⁵¹ Center for Disease Control, Youth Risk Behavior Surveillance System, State In 2015 Tennessee data was not collected

⁵² National Child Health Obesity - Accessed December 2022 from <https://www.cdc.gov/nchs/data/infantandchild/infantandchildobesityreport.htm>, 2022/12/27

⁵³ Center for Disease Control, Causes of Obesity

⁵⁴ <https://www.tn.gov/education/health-and-safety/coordinated-school-health/body-mass-index-reports/>

⁵⁵ To view the CSH BMI Reports visit <https://www.tn.gov/education/health-and-safety/coordinated-school-health/body-mass-index-reports/>

⁵⁶ Tennessee Department of Education Coordinated School Health Annual Body Mass Index Report

⁵⁷ National Survey of Children's Health Data - Accessed December 2022 from <https://www.nchs.gov/data/infantandchild/infantandchildobesityreport.htm>, 2022/12/27

⁵⁸ National Survey of Children's Health Data - Department of Health and Human Services, Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB)

⁵⁹ CDC, Smoking and Tobacco Use - Quick Facts on the Past, Present, and Future of Tobacco and Young Adults - Accessed December 2022 from

https://www.cdc.gov/tobacco/basic_information/quick_facts/Quick_Facts_on_the_Risk_of_Tobacco_to_Young_Adults_Focus_and_Future

⁶⁰ <https://www.tn.gov/education/health-and-safety/coordinated-school-health/body-mass-index-reports/>

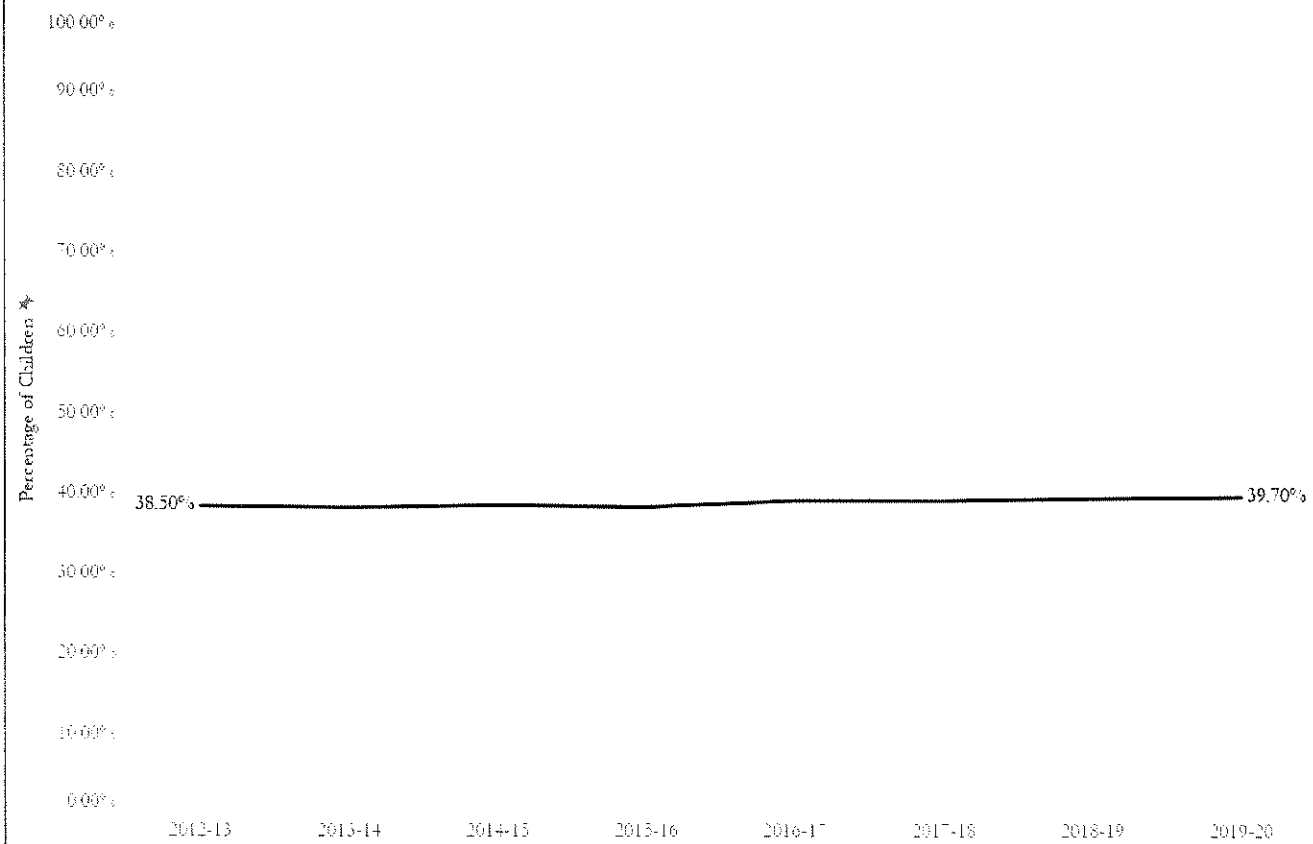
⁶¹ CDC, Electronic Cigarette Use - Accessed January 2023 at <https://www.cdc.gov/e-cigarettes/>

⁶² Center for Disease Control, Youth Risk Behavior Surveillance System

or given illegal **Drugs on School Property**. In both 2017 and 2019, Tennessee's values were statistically higher than the United States' values.⁶¹

Youth Obesity

Percentage of public school students in Tennessee with a body mass index (BMI) greater than or equal to the 85th percentile for children of the same age and sex. In the United States, the prevalence of obesity in children aged 2-19 from 2017-2020 was 19.7%. In Tennessee, youth obesity has remained above 38% since 2012.



Data Source: TN: Tennessee Department of Education Coordinated School Health Annual Body Mass Index Report
Data Source: US: National Health and Nutrition Examination Survey 2017–March 2020 Pre-pandemic Data Files Development of Files and Prevalence Estimates for Selected Health Outcomes: National Center for Health Statistics: U.S. - Published Date: 06/14/2021
Data Note: Youth obesity data in Tennessee is collected through evaluation in schools. Nationally, youth obesity data is collected through the National Health and Nutrition Examination Survey.

Asthma

Percentage of children ages 0-17 who currently have asthma (2-year estimate)

■ Tennessee
■ United States

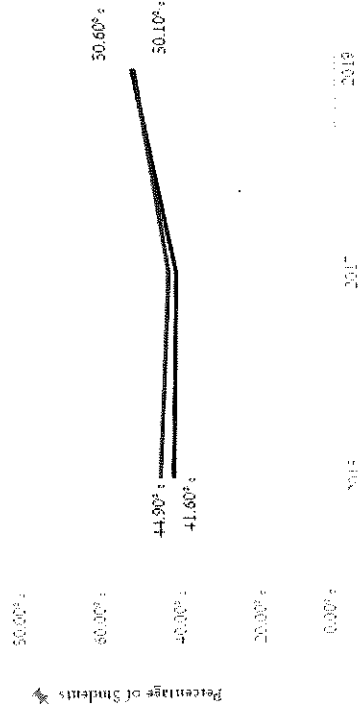


Data Source: National Survey of Children's Health, U.S. Department of Health and Human Services, National Center for Health Statistics, PHHS, National and Child Health Survey, NHIS

Electronic Vapor Usage

Percentage of high school students who reported ever using electronic vapor products (including e-cigarettes, vapes, vape pens, e-cigs, e-hookahs, hookah pens, and mods). In 2019, 50.6% of Tennessee high school students reported ever using electronic vapor products.

■ Tennessee
■ United States



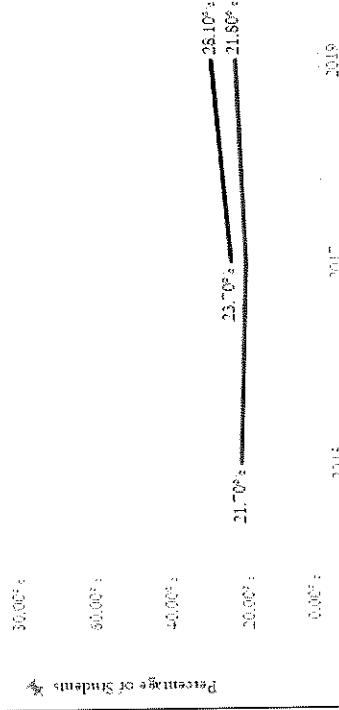
Data Source: Centers for Disease Control, Youth Risk Behavior Surveillance System

Drugs on School Property

Percentage of high school students who were offered, sold, or given an illegal drug on school property (during the 12 months before the survey).

In 2017 and 2019, Tennessee's values were statistically higher than the United States' values.

■ Tennessee
■ United States



Data Source: Centers for Disease Control, Youth Risk Behavior Surveillance System
Data Note: In 2015 Tennessee data was not collected.

Youth Mental Health

- In 2019, 36.7% of Tennessee high school students experienced **Hopelessness**.⁶²
- In 2019, 3.9% of youth in Tennessee had one or more **Suicide Attempt** resulting in an injury, poisoning, or overdose that had to be treated by a doctor or nurse.⁶³
- In 2021, the youth **Suicide Mortality** rate was 2.46 deaths per 100,000 population (<18).⁶⁴

In 2019, 36.7% of Tennessee high school students reported being sad or hopeless almost every day for two or more weeks in a row to the point that they stopped doing some usual activities.⁶⁵ There was no statistical difference between **Youth Hopelessness** in Tennessee and the United States. In 2019, 3.9% of youth in Tennessee had one or more **Suicide Attempt** resulting in an injury, poisoning, or overdose that had to be treated by a doctor or nurse.⁶⁶ While Tennessee's percent of youth with suicide attempts requiring medical attention in 2019 was higher than the United States average, it was not statistically higher. Youth between the ages of 15 and 24 experienced the highest rates for both self-harm injury and suicidal ideation. In a CDC review of suicide from 2017-2019 in the United States, youth who made a suicide plan and attempted suicide increased.⁶⁷ Youth **Suicide Mortality** is defined as deaths due to intentional self-harm per 100,000 population (<18). In 2021, the youth suicide mortality rate in Tennessee was 2.46 deaths per 100,000 population. The TN Department of Health 2021 Annual Suicide Prevention noted 32 children dying by suicide.⁶⁸ Of the children who died, life stressors prior to death were noted including “experiencing racism (n=9), being victims of bullying (n=9), poverty (n=14), pregnancy (n=3), housing instability (n=3), parents’ divorce/separation (n=9), family discord (n=10) communicating suicidal thoughts or intents, and having divorced parents.”⁶⁹ The 2022 Report notes that Suicide has increased for ages 10-24 from 2020-2021. The Tennessee Department of Health’s Suicide Prevention program releases detailed annual data reports on suicide with more information on suicide by age.⁷⁰

⁶² Centers for Disease Control, Youth Risk Behavior Surveillance System

⁶³ Centers for Disease Control, Youth Risk Behavior Surveillance System

⁶⁴ Data Source: TN: Tennessee Department of Health, Death Statistical Life: TN: Office of Vital Statistics.

⁶⁵ Centers for Disease Control, Youth Risk Behavior Surveillance System

⁶⁶ Centers for Disease Control, Youth Risk Behavior Surveillance System

⁶⁷ Centers for Disease Control, Trends in the Prevalence of Suicide-Related Behaviors: National YRBS, 1991-2019.

⁶⁸ https://www.cdc.gov/health/youth/school/ydrb/factsheets/2019_suicide_mortality_yrbs.htm

⁶⁹ Centers for Disease Control, Youth Risk Behavior Surveillance System

⁷⁰ TN Department of Health, 2021 Suicide Prevention Report, <https://www.tn.gov/coronavirus/tn-health/program-areas/2021-suicide-annual-report.pdf>

⁷¹ Tennessee Department of Health's Suicide Data and Surveillance Information <https://www.tn.gov/health/health-program-areas/tns/suicide-prevention/data.htm>

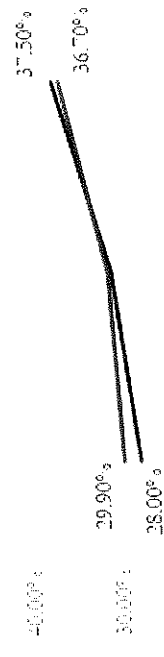
Youth Hopelessness

Percentage of high school students enrolled in grades 9 to 12 who reported being sad or hopeless almost every day for 2 or more weeks in a row so that they stopped doing some usual activities, during the 12 months before the survey.

In 2019, there was no statistical difference between youth hopelessness in Tennessee and the United States.



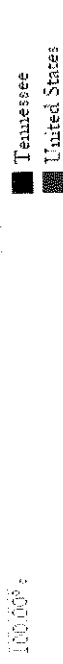
Percentage of Youth



Data Source: Centers for Disease Control Youth Risk Behavior Surveillance System

Youth Suicide Attempt

Percentage of youth with one or more suicide attempts resulting in an injury, poisoning, or overdose that had to be treated by a doctor or nurse (during the 12 months before the survey).



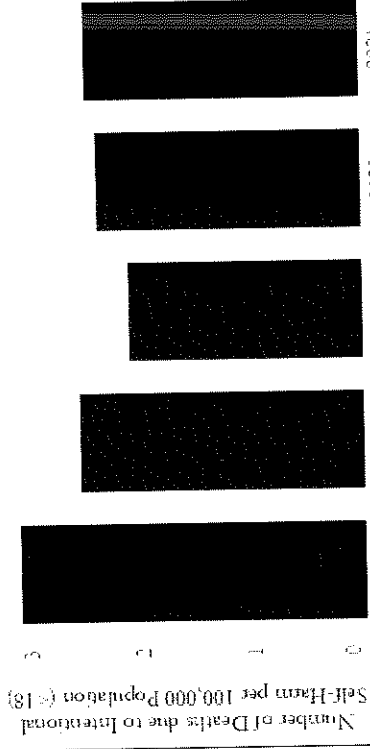
Percentage of Youth



Data Source: Centers for Disease Control Youth Risk Behavior Surveillance System

Youth Suicide Mortality

Number of deaths due to intentional self-harm per 100,000 population (<18) in Tennessee.



Data Source: Data Source: TN: Tennessee Department of Health, Death Surveillance File - TN Office of Vital Statistics

Pregnancy and Childbirth

- In 2021, **Prenatal Care** was initiated in 91.83% of live births in Tennessee.⁷¹
- In 2020, the percent of mothers **Smoking During Pregnancy** in Tennessee (10.86%) was almost double the percent of mothers smoking during pregnancy in the United States (5.50%). In 2021, 9.11% of Tennessee mothers reported smoking during pregnancy.⁷²
- In 2021, 11.27% of live births in Tennessee were **Preterm Births**.⁷³
- In 2021, 9.3% of live births in Tennessee had a **Low Birthweight**.⁷⁴
- In 2021, **Breastfeeding** was initiated with 81.08% of live births in Tennessee.⁷⁵
- In 2020, 14.87% of Tennessee women with a recent live birth reported experiencing **Postpartum Depression**.⁷⁶
- In 2020, Tennessee's **Infant Mortality** rate was 6.30 infant deaths per 1,000 live births, compared to 5.42 in the United States. In 2021, Tennessee infant mortality rate was 6.18 infant deaths per 1,000 live births.⁷⁷
- In 2019, the **Pregnancy-Related Mortality Ratio** was 28.6 deaths per 100,000 live births in Tennessee.⁷⁸
- In 2020, there were 42 **Pregnancy-Associated, but not related Deaths**, defined as death within one year of pregnancy where pregnancy was not the aggravating factor.⁷⁹
- In 2020, the **Teen Birth** rate in the United States was 15.40 compared to 23.26 in Tennessee.

Prenatal Care, such as following a safe and healthy diet, reducing exposure to harmful substances, and controlling existing conditions such as high blood pressure, can reduce the risk of pregnancy complications.⁸⁰ In 2021, prenatal care was initiated in 91.83% of live births in Tennessee during the first and sixth month of pregnancy.⁸¹ Nationally, initiation of prenatal care is measured by trimester. In 2020, 77.7% of all mothers initiated prenatal care during the first trimester. Only 6.2% of mothers in the United States initiated prenatal care late or not at all. **Smoking During Pregnancy**⁸² and

⁷¹ Data Source: TN: Tennessee Department of Health, Birth Statistical File; TN: Office of Vital Statistics; Data Source: U.S.: CDC, National Vital Statistics Report Vol. 70 No. 17 February 7, 2022, U.S. Value for 2020 available in report only.

⁷² Tennessee Department of Health, Birth Statistical File; TN: Office of Vital Statistics.

⁷³ Tennessee Department of Health, Birth Statistical File; TN: Office of Vital Statistics.

⁷⁴ Tennessee Department of Health, Birth Statistical File; TN: Office of Vital Statistics.

⁷⁵ Tennessee Department of Health, Birth Statistical File; TN: Office of Vital Statistics.

⁷⁶ Centers for Disease Control and Prevention, Pregnancy Risk Assessment Monitoring System to State Epidemiology.

⁷⁷ Tennessee Department of Health, Death Statistics; TN: Office of Vital Statistics.

⁷⁸ Tennessee Department of Health, Death Statistics; TN: Office of Vital Statistics. Accessed via the Tennessee Department of Health Maternal Mortality Review Annual Report.

⁷⁹ Tennessee Department of Health, Death Statistics; TN: Office of Vital Statistics. Accessed via the Tennessee Department of Health Maternal Mortality Review Annual Report.

⁸⁰ National Institute of Child Health and Human Development, What is Prenatal Care and why is it important? Accessed December 2022.

⁸¹ <https://www.nichd.nih.gov/health/topics/pregnancy/conditions/maternal/prenatal-care>.

⁸² Data Source: TN: Tennessee Department of Health, Birth Statistical File; TN: Office of Vital Statistics; Data Source: U.S.: CDC, National Vital Statistics Report Vol. 70 No. 17 February 7, 2022, U.S. Value for 2020 available in report only.

⁸³ Tennessee Department of Health, Birth Statistical File; TN: Office of Vital Statistics.

⁸⁴ Tennessee Department of Health, Birth Statistical File; TN: Office of Vital Statistics.

secondhand smoke exposure can lead to birth defects, preterm birth, and sudden infant death syndrome (SIDS).⁸³ In 2020, the percent of mothers smoking during pregnancy in Tennessee (10.86%) was almost double the percent of mothers smoking during pregnancy in the United States (5.50%). In 2021, 9.11% of Tennessee mothers reported smoking during pregnancy.

Engaging in early prenatal care and not smoking during pregnancy can help prevent complications such as **Preterm Births** and **Low Birthweight**. In 2020, 10.92% of live births in Tennessee were preterm, defined as less than 37 weeks gestation.⁸⁴ In the United States, 10.09% of live births in 2020 were preterm. While 2021 data for the United States has not been released, 11.27% of live births in Tennessee in 2021 were preterm. Children born early may experience breathing problems, development delays, vision problems and hearing problems. In 2020, 8.9% of live births in Tennessee had a low birthweight, defined as less than 2,500 grams, compared to 8.24% in the United States. In 2021, 9.3% of live births in Tennessee had a low birthweight.

After birth, **Breastfeeding** can play an important role in reducing the risk of health conditions in infants such as asthma, obesity, type 1 diabetes, and SIDS. Additionally, breastfeeding has positive health impacts for mothers including reduced risk of high blood pressure, type 2 diabetes, ovarian and breast cancer.⁸⁵ In 2020, breastfeeding was initiated with 83.5% of live births in the United States and 81.2% of live births in Tennessee.⁸⁶ Monitoring the mental health of mothers after birth is critical in addition to monitoring physical recovery. **Postpartum Depression** symptoms may include “feeling distant from your baby, thinking about hurting yourself or your baby, and doubting your ability to care for your baby.”⁸⁷ In 2020, 14.87% of Tennessee women with a recent live birth reported experiencing depressive symptoms, compared to 13.40% in the United States.⁸⁸

According to the CDC, in the United States in 2020, “preterm birth and low birth weight accounted for about 16% of infant deaths (deaths before 1 year of age).”⁸⁹ In 2020, Tennessee experienced 6.30 infant deaths per 1,000 live births, compared to 5.42 in the United States. In 2021, the **Infant Mortality** rate per 1,000 live births in Tennessee was 6.18, down from 7.38 in 2017.⁹⁰ **Pregnancy-Related Death**⁹¹ is defined as death within one year of pregnancy where pregnancy was the aggravating factor. The pregnancy related mortality ratio (PRMR) increased from 28.6 in 2019 to 58.5 in 2020. This increase may have occurred due to the increase of overall deaths in 2020 and the implementation of the Utah Criteria when determining the pregnancy relatedness of overdose deaths.⁹² The Tennessee Department of Health’s 2022 Maternal Mortality Annual Report noted “In 2020 discrimination contributed to 1 in 3 (33%) of pregnancy-related deaths.” In 2020, there were 42 **Pregnancy-Associated, but not related Deaths**, defined as death within one year of pregnancy

The Tennessee Department of Health’s 2022 Maternal Mortality Annual Report noted “In 2020 discrimination contributed to 1 in 3 (33%) of pregnancy-related deaths.”

⁸³ CDC, *Guidance: Outlook for Mother and Baby*, Accessed December 2022 from <https://www.cdc.gov/tobacco/impact/motherandbaby/index.htm>

⁸⁴ Tennessee Department of Health, *Birth Statistics of Life*, TN, Office of Vital Statistics.

⁸⁵ CDC, *Breastfeeding*, Accessed December 2022 from <https://www.cdc.gov/breastfeeding/about-breastfeeding/why-it-matters.html>

⁸⁶ Tennessee Department of Health, *Birth Statistics of Life*, TN, Office of Vital Statistics.

⁸⁷ CDC, *Reproductive Health: Depression During and After Pregnancy*, Accessed December 2022 from <https://www.cdc.gov/reproductivehealth/mental/index.htm>

⁸⁸ Centers for Disease Control and Prevention, *Pregnancy Risk Assessment Monitoring System or State Epidemiology*

⁸⁹ CDC, *Reproductive Health: Preterm Birth*, Accessed December 2022 from <https://www.cdc.gov/reproductivehealth/mental/index.htm>

⁹⁰ Tennessee Department of Health, *Death Statistics*, TN, Office of Vital Statistics.

⁹¹ Tennessee Department of Health, *Death Statistics*, TN, Office of Vital Statistics. Accessed via the Tennessee Department of Health Maternal Mortality Review Annual Report.

⁹² Smith AP, Moody J, Jones LM, Schrage H, Butler J, Delaney MP, Vavro MW, Mize TD. Standardized Criteria for Review of Perinatal Deaths and Associated Long-Term Health Outcomes. *Obstet Gynecol*. 2020;66(1):61-65. doi: 10.1097/AOG.0000000000003586, PMID: 32923616; PMCID: PMC7206600.

where pregnancy was not the aggravating factor.⁹³ The Tennessee Maternal Mortality Review Committee issues a detailed report annually to the Tennessee General Assembly on maternal mortality and all data and reports are published online.⁹⁴

Teens who become pregnant and have children are less likely to graduate from high school. Additionally, the children of teen parents are “more likely to have lower school achievement and to drop out of high school, have more health problems, be incarcerated at some time during adolescence, give birth as a teenager, and face unemployment as a young adult.”⁹⁵ **Teen Births** in Tennessee have been decreasing in recent years. In 2021, there were 21.5 births per 1,000 women aged 15-19, down from 26.6 in 2017.⁹⁶ Despite this decrease, teen births in Tennessee remains higher than in the United States overall. In 2020, the teen birth rate in the United States was 15.40 compared to 23.26 in Tennessee. Tennessee is ranked 44th in the United States and therefore has one of the highest teen birth rates in the country.

⁹³ Tennessee Department of Health, Death Statistics – TN, Office of Vital Statistics, Accessed in the Tennessee Department of Health Maternal Mortality Review Annual Report.

⁹⁴ To access the TN Maternal Mortality Review Information please visit <https://www.tn.gov/birth/facility-program.aspx#/tve/maternal-mortality-review.html> or CDC, Teen Pregnancy, Accessed December 2022 from:

<https://www.cdc.gov/teenpregnancy/about/index.htm#:~:q=y=Teen%20Statistics%20birth%20rate&context=2017%20%2023%20report%202016>.

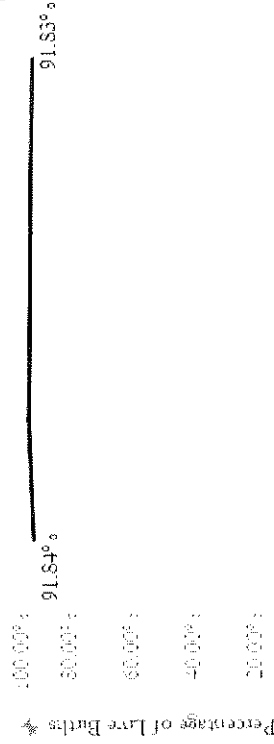
⁹⁵ Data Source: TN: Tennessee Department of Health, Birth Statistics File – TN, Office of Vital Statistics, Data Source: US: CDC WONDER, Under-Public, File Files, Accessed in America's Health Rankings.

⁹⁶ <https://www.tn.gov/birth/facility-program.aspx#/tve/maternal-mortality-review.html>

Prenatal Care

Percentage of live births in which the mother began prenatal care between the first and sixth month of pregnancy.

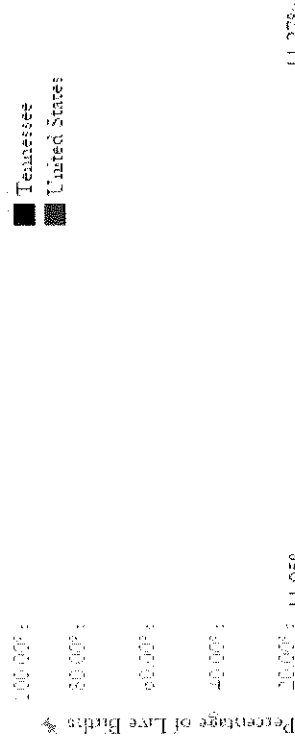
Nationally, initiation of prenatal care is measured by trimester. In 2020, 77.7% of all mothers initiated prenatal care during the first trimester. Only 6.2% of mothers in the United States initiated prenatal care late or not at all.



Data Source: TN: Tennessee Department of Health, Birth Statistics File - TN Office of Vital Statistics; US: CDC National Vital Statistics Report Vol. 70 No. 1, February, 2022. US Value for 2021 not available.

Preterm Births

Percentage of live births preterm (<37 weeks gestation)

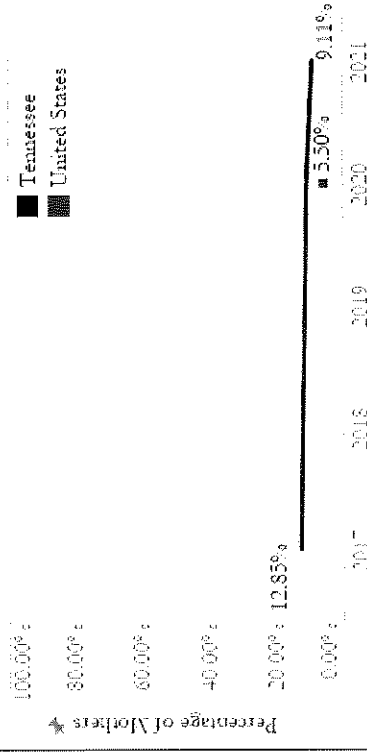


Data Source: TN: Tennessee Department of Health, Birth Statistics File - TN Office of Vital Statistics; US: CDC National Vital Statistics Report Vol. 70 No. 1, February, 2022. US Value for 2021 not available.

Smoking During Pregnancy

Percentage of mothers who reported smoking cigarettes during pregnancy.

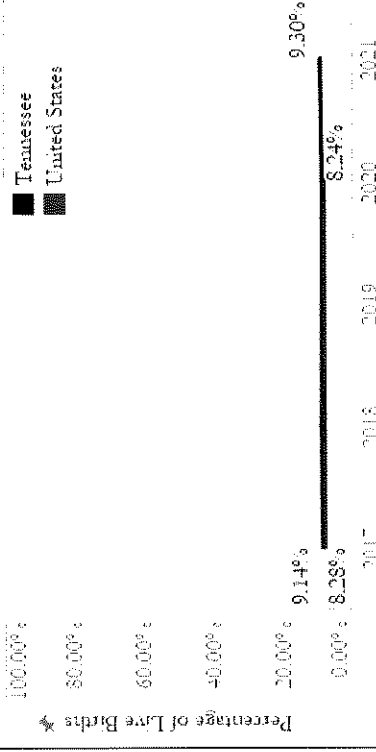
In 2020, the percent of mothers smoking during pregnancy in Tennessee (10.89%) was almost double the percent of mothers smoking during pregnancy in the United States (5.50%).



Data Source: TN: Tennessee Department of Health, Birth Statistics File - TN Office of Vital Statistics; US: CDC National Vital Statistics Report Vol. 70 No. 1, February, 2022. US Value for 2021 not available.

Low Birthweight

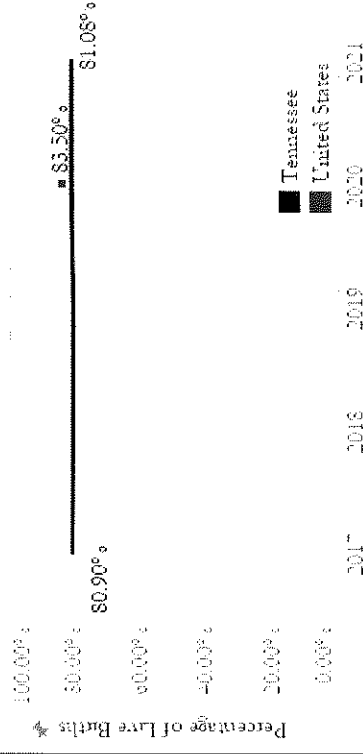
Percentage of live births with low birthweight (<2,500 grams).



Data Source: TN: Tennessee Department of Health, Birth Statistics File - TN Office of Vital Statistics; US: CDC National Vital Statistics Report Vol. 70 No. 1, February, 2022. US Value for 2021 not available.

Breastfeeding

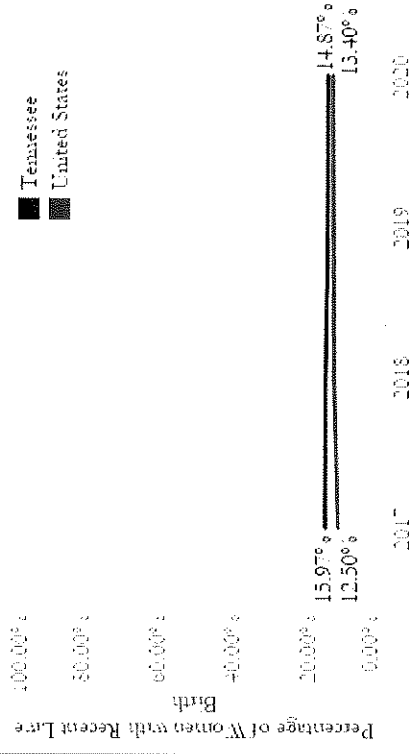
Percentage of live births where breastfeeding is initiated at birth. In 2020, breastfeeding was initiated with 83.5% of live births in the United States and 81.2% of live births in Tennessee.



Data Source: TN: Tennessee Department of Health, Birth Statistical File - TN Office of Vital Statistics; US: CDC National Vital Statistics Report Vol. "0 No. 1" February, 2022 US Value for 2020 available in report only.

Postpartum Depression

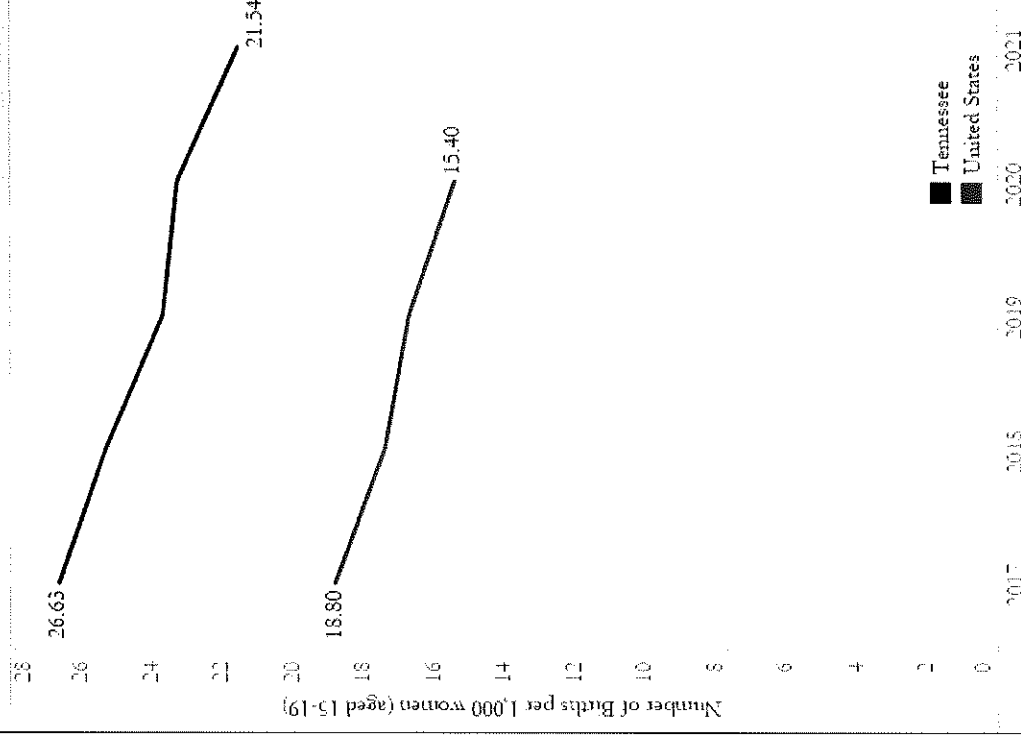
Percentage of women with a recent live birth who reported experiencing depressive symptoms.



Data Source: Centers for Disease Control and Prevention, Pregnancy Risk Assessment Monitoring System or State Equivalent

Teen Births

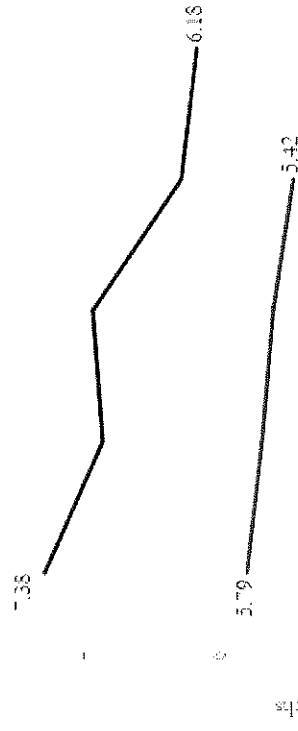
Number of births per 1,000 women aged 15-19 years



Data Source: TN: Tennessee Department of Health, Birth Statistical File - TN Office of Vital Statistics; US: CDC WONDER, Natality Public Use Files, Accessed via America's Health Rankings.

Infant Mortality

Number of infant deaths per 1,000 live births



Number of Infant Deaths per 1,000 Live Births

■ Tennessee
■ United States

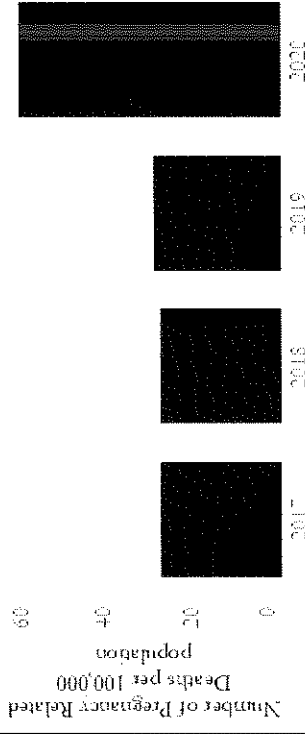
2017 2018 2019 2020 2021

Data Source: TN: Tennessee Department of Health Birth Statistics File - TN Office of Vital Statistics; Statistics US: CDC National Vital Statistics Report Vol. 70 No. 1 February 2021; US Value for 2021 not listed.

Pregnancy-Related Mortality Ratio

Number of deaths within one year of pregnancy where pregnancy was the aggravating factor per 100,000 live births in Tennessee.

The pregnancy related mortality ratio (PRMR) increased from 28.6 in 2019 to 58.5 in 2020. This increase may have occurred due to the increase of overall deaths in 2020 and the implementation of the Utah Criteria when determining the pregnancy relatedness of overdose deaths.



Data Source: Tennessee Department of Health, Death Statistics - TN Office of Vital Statistics; Accessed via the Tennessee Department of Health Annual Mortality Review Annual Report.

Pregnancy Associated (not related) Deaths

Number of deaths within one year of pregnancy where pregnancy was NOT the aggravating factor in Tennessee.



Data Source: Tennessee Department of Health, Death Statistics - TN Office of Vital Statistics; Accessed via the Tennessee Department of Health Annual Mortality Review Annual Report.





A Healthy Life

To assess health in Tennessee's adult and older adult populations, the State of Health report considers metrics on social determinants of health such as unemployment and adult literacy, health behaviors and conditions such as diabetes and suicide, as well as specific metrics to assess health in Tennessee's older adults including social isolation and caregiving.

A Healthy Life				
Per Capita Personal Income	Adult Poverty	Food Insecurity	Poverty and the Labor Force	Unemployment
Workplace Benefits	Fatal Occupational Injuries	Adult Numeracy	Adult Literacy	Violent Crime
Domestic Violence	Chlamydia	HIV	Hepatitis C	COVID-19 Vaccinations
Influenza Vaccinations	Chronic Conditions	Adult Smoking	Physical Activity	Diabetes
Binge Drinking	Nonfatal Drug Overdose	Fatal Drug Overdose*	Frequent Mental Distress	Suicidal Ideation
Suicide Attempt	Suicide Mortality	Premature Death	65+ Poverty	Grandparents Raising Grandchildren
Elder Abuse	Social Isolation	Falls 65+	Caregiving	Dementia

Social Determinants of Health

Income and Workforce

- While Tennessee's **Per Capita Personal Income** is increasing, it remains below the United States average and is increasing more slowly than the United States.⁹⁷ 
- In 2021, 12.4% of Tennessee adults were living in **Poverty**.⁹⁸ 
- Food Insecurity** in Tennessee was statistically higher than food insecurity in the United States in 2018-2020, but not statistically different in 2019-2021.⁹⁹ 
- The 47.2% percent of Tennesseans aged 20-64 who are **living in poverty are participating in the labor force**.¹⁰⁰ 

⁹⁷ United States Bureau of Economic Analysis, Retrieved from www.bea.gov

⁹⁸ United States Census Bureau, American Community Survey, 1-Year Public Use Estimates.

⁹⁹ USDA, Economic Research Service.

¹⁰⁰ United States Census Bureau, American Community Survey, 1-Year Public Use Estimates.

- In 2019, 4.5% of the labor force in both Tennessee and the United States were **Unemployed**.¹⁰¹



- In 2020, 52.3% of employed workers used some type of paid time off as a **Workplace Benefit**.¹⁰²



- In 2020, Tennessee experienced 5.1 **Fatal Occupational Injuries** per 100,000 full-time workers.¹⁰³



Tennessee's **Per Capita Personal Income** increased from \$43,499 in 2016 to \$54,873 in 2021. Nationally, the per capita income increased from \$49,613 in 2016 to \$63,444 in 2021.¹⁰⁴ While Tennessee's per capita personal income is increasing, it remains below the United States average and is increasing more slowly than the United States. In 2021, 12.40% of Tennessee adults were living in **Poverty**, compared to 11.60% nationally.¹⁰⁵ As children in poverty are more likely to experience poverty as an adult, intergenerational cycles of poverty persist that last decades. Poverty is associated with “increased risk of mental illness, chronic disease, higher mortality, and lower life expectancy. One study found that men and women in the top one percent of income were expected to live 14.6 and 10.1 years longer respectively than men and women in the bottom one percent.”¹⁰⁶ Additionally, individuals living in poverty are more likely to be food insecure. Food insecurity is associated with “decreased nutrient intakes, increased rates of mental health problems and depression, diabetes, hypertension,” and more.¹⁰⁷ **Food Insecurity** in Tennessee was statistically higher than food insecurity in the United States in 2018-2020, but not statistically different in 2019-2021.¹⁰⁸

Ideally, persons who are engaged in the labor force should not be living in poverty. However, of people aged 20-64 living in poverty in Tennessee, 47.2% were engaged in the labor force (employed or unemployed). The percentage of Tennesseans **in poverty while engaged in the labor force** decreased from 49.9% in 2015 to 47.2% in 2021. . Tennessee's value was slightly below the United States in all years except 2018.¹⁰⁹ **Unemployment** in Tennessee has stayed consistent with national unemployment. In 2019 4.5% of the labor force in both Tennessee and the United States were unemployed.¹¹⁰ For real time up to date data on the labor force in Tennessee, including information on poverty within the labor force and unemployment, visit the TN Department of Labor and Workforce Development's Labor Force Statistics webpage.¹¹¹

Tennesseans engaged in the labor force must consider access to **Workplace Benefits** and **Workplace Safety** when searching for employment opportunities. In 2020, 52.3% of employed workers in Tennessee used some type of paid time off compared to 54.9% in the United States.¹¹² In 2020, Tennessee experienced 5.1 **Fatal Occupational Injuries** per 100,000 full-time workers.¹¹³

¹⁰¹ United States Census Bureau, American Community Survey, 1-Year Public Use Database.

¹⁰² U.S. Census Bureau, Current Population Survey (CPS), Annual Social and Economic Supplement (ASEC). Accessed via National Health Security Perspectives Link.

¹⁰³ U.S. Bureau of Labor Statistics, Bureau of Labor Occupational Injuries, <https://www.bls.gov>.

¹⁰⁴ United States Census Bureau, American Community Survey, 1-Year Public Use Database.

¹⁰⁵ Healthy People, 2030: Poverty: *Eliminate community health disparities*. <https://healthypeople.gov/2030/about-the-topical-statistics-and-data-objectives/community-health-disparities>. Accessed 10/11/2021.

¹⁰⁶ Goudreau, Craig, Zibul, Jane, *Food Insecurity and Health Outcomes*, *Health Affairs* Vol. 34(11), November 2015. <https://doi.org/10.1371/journal.pone.0151068>.

¹⁰⁷ USDA Economic Research Service.

¹⁰⁸ United States Census Bureau, American Community Survey, 1-Year Public Use Database.

¹⁰⁹ United States Census Bureau, American Community Survey, 1-Year Public Use Database.

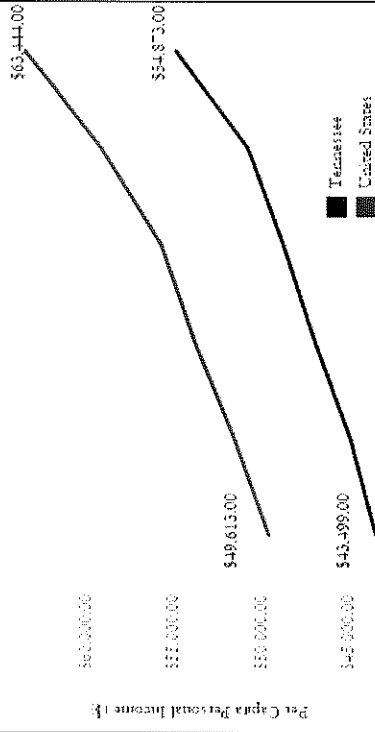
¹¹⁰ To view the TN Dept of Labor and Workforce Development's Labor Force Statistics Webpage visit: <https://www.tn.gov/agencies/industrial/department-of-labor-and-workforce-development/labor-force-statistics>.

¹¹¹ U.S. Census Bureau, Current Population Survey (CPS), Annual Social and Economic Supplement (ASEC). Accessed via National Health Security Perspectives Link.

¹¹² U.S. Bureau of Labor Statistics, Bureau of Labor Occupational Injuries, <https://www.bls.gov>.

Per Capita Personal Income

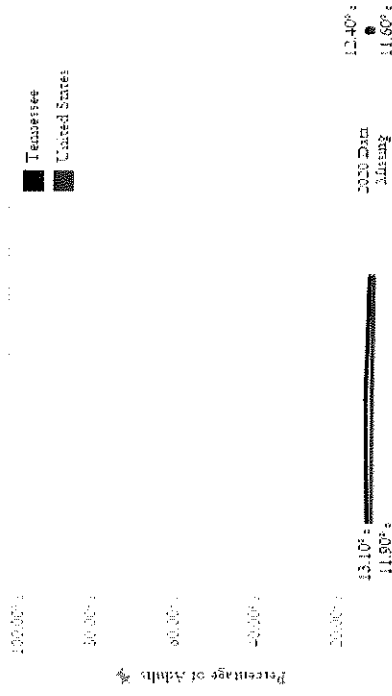
Annual, not seasonally adjusted, per capita personal income in dollars. While Tennessee's per capita personal income is increasing, it remains below the US average and is increasing more slowly than the US average.



Data Source: United States Bureau of Economic Analysis. Retrieved from <https://fred.stlouisfed.org/>

Adult Poverty

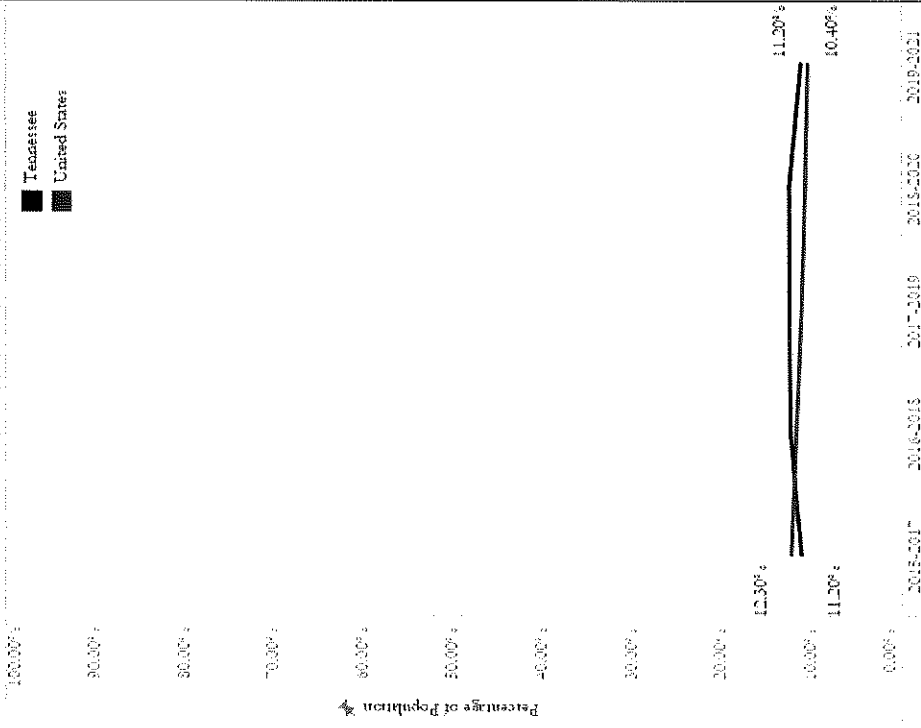
Percentage of all persons 18 years and over whose income in the past 12 months is below the poverty level.



Data Source: United States Census Bureau, American Community Survey. Official Poverty Line Estimates.

Food Insecurity

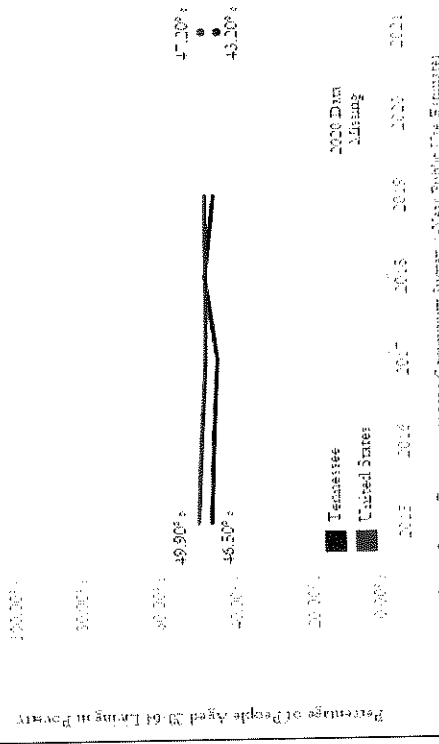
Percentage of population who lack adequate access to food (all ages). Food insecurity in Tennessee was statistically higher than food insecurity in the United States in 2018-2020.



Data Source: USDA Economic Research Service
Data Note: Difference from US average was statistically significant with 90 percent confidence in 2018-2020. Standard error of difference is small; however, there is no correlation between national and individual state estimates.

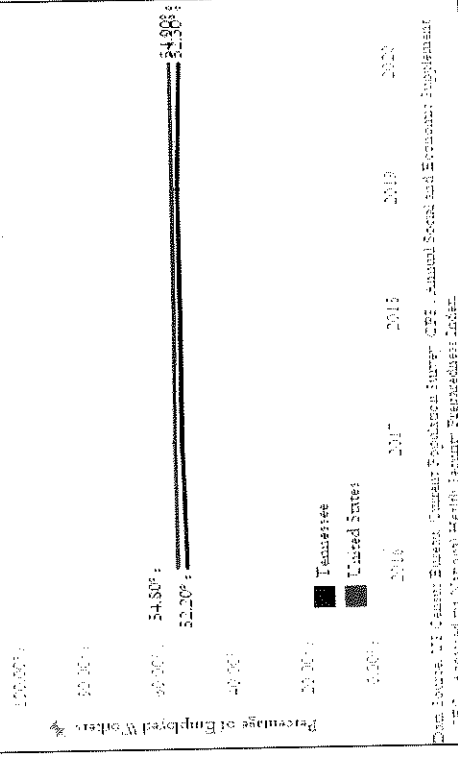
Poverty and the Labor Force

Percentage of people 20-64 years of age who are living below poverty level who are participating in the labor force (employed or unemployed).
The percentage of Tennesseans aged 20-64 in poverty participating in the labor force remained around 48% between 2015-2019. Tennessee's value was below the United States value in all years except 2018.



Workplace Benefits

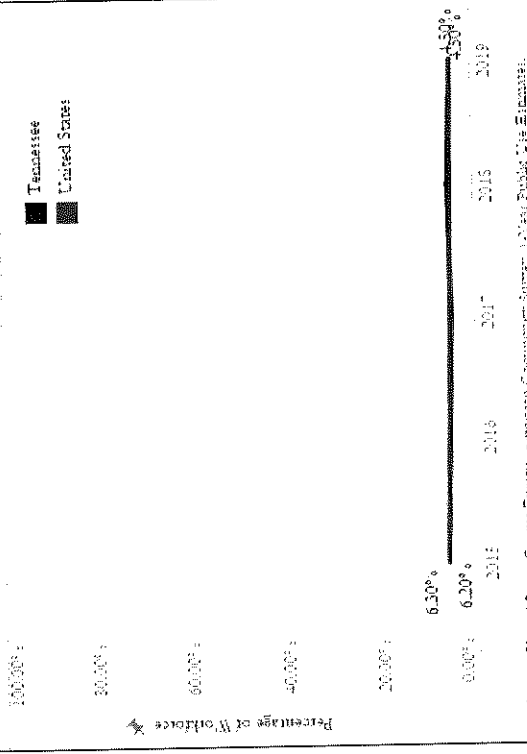
Percentage of employed workers in Tennessee who used some type of paid time off (PTO) benefit.



Data Source: U.S. Census Bureau, Current Population Survey (CPS), Annual Social and Economic Supplement (ASEC), Accessed via National Health Interview Survey (NHIS) Explorer

Unemployment

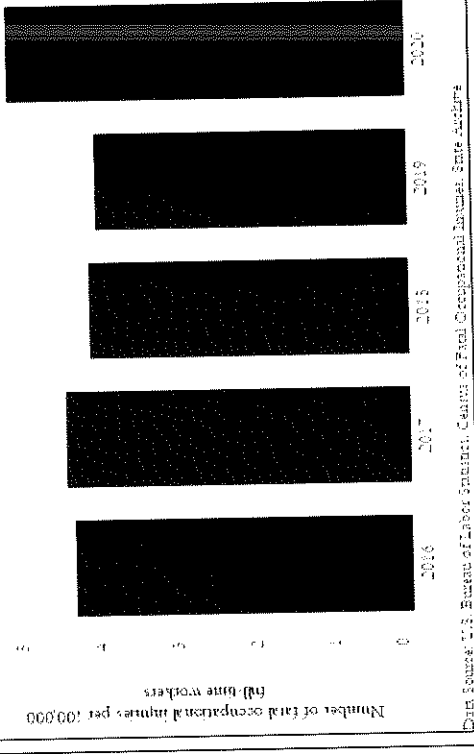
Percentage of the labor force who are unemployed.



Data Source: United States Census Bureau, American Community Survey, 1-Year Public Use Estimates



Workplace Safety

Number of fatal occupational injuries per 100,000 full-time equivalent workers.

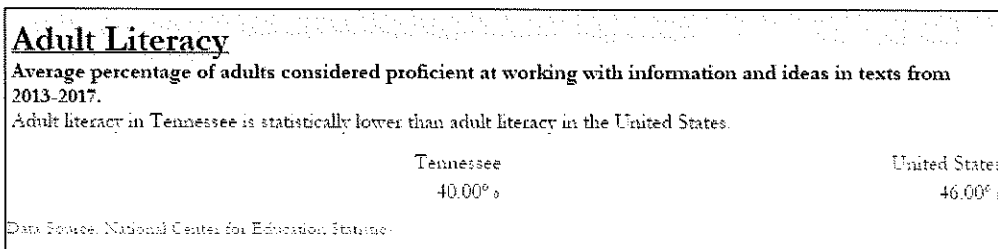
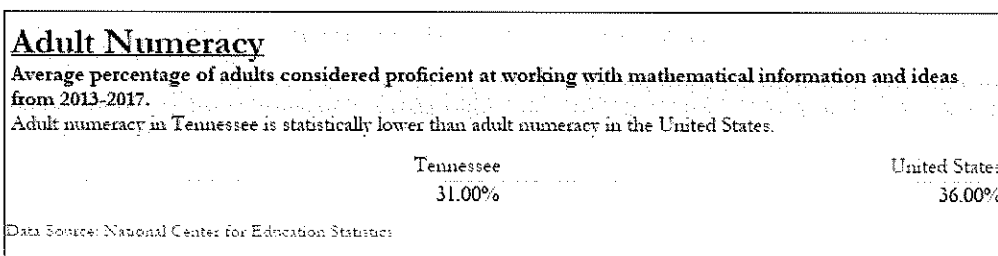


Data Source: U.S. Bureau of Labor Statistics, Census of Fatal Occupational Injuries, State Estimates

Education

- **Adult Numeracy** in Tennessee is statistically lower than adult numeracy in the United States.¹¹⁴ 
- **Adult Literacy** in Tennessee is statistically lower than adult literacy in the United States.¹¹⁵ 

Understanding and digesting mathematical and textual information impacts everything from managing a household budget to health literacy and adherence to medical guidance. **Adult Numeracy**¹¹⁶ in Tennessee is statistically lower than adult numeracy in the United States. In Tennessee 31% of adults are considered proficient at working with mathematical information and ideas, compared to 36% in the United States. **Adult Literacy**¹¹⁷ in Tennessee is statistically lower than adult literacy in the United States. In Tennessee, 40% of adults are considered proficient at working with information and ideas in text, compared to 46% in the United States.





Source: National Center for Education Statistics

National Center for Education Statistics
National Center for Education Statistics
National Center for Education Statistics
National Center for Education Statistics

Source: National Center for Education Statistics

Community Safety

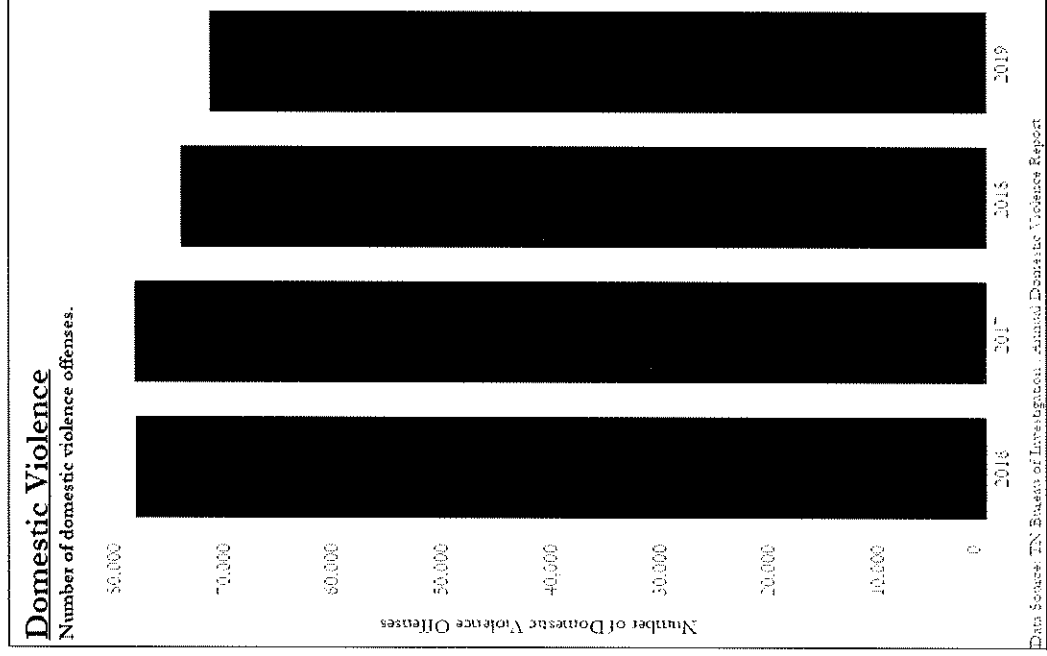
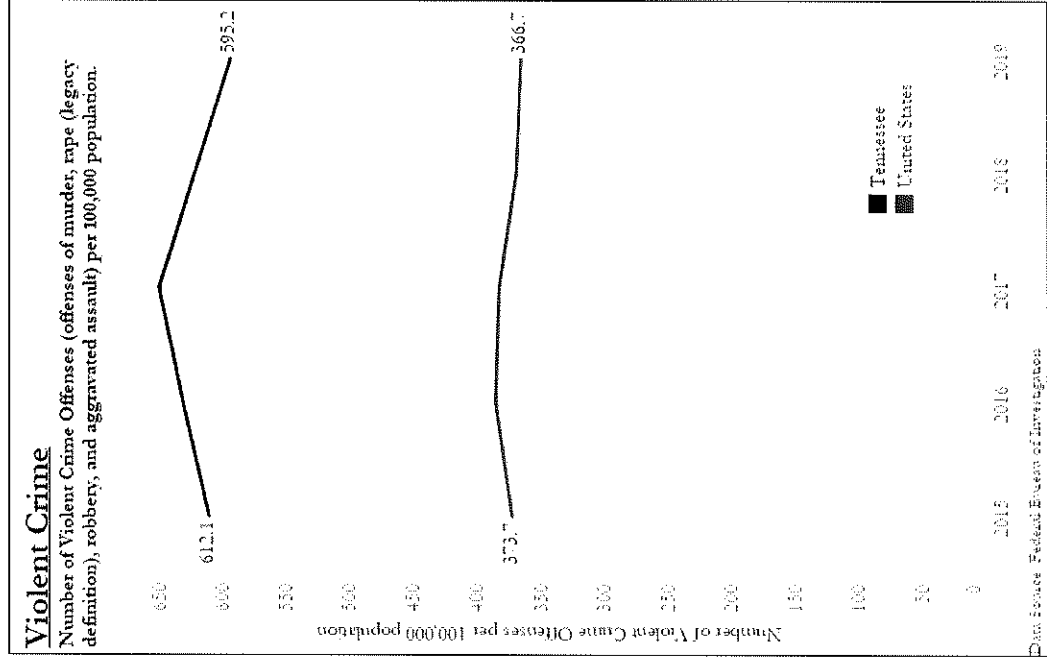
- In 2019, the **Violent Crime** rate (number of offenses per 100,000 population) was higher in Tennessee (595.2) compared to the United States (366.7).¹¹⁸ 
- The number of **Domestic Violence** offenses in Tennessee has decreased since 2016 but remains high with 71,263 domestic violence offenses in 2019.¹¹⁹ 

In 2019, the **Violent Crime** rate (number of offenses per 100,000 population) was higher in Tennessee (595.2) compared to the United States (366.7).¹²⁰ Violent crime, defined as murder rape, robbery, and aggravated assault, has remained higher in Tennessee than the United States for multiple years. **Domestic Violence** specifically is a problem in Tennessee. Domestic violence offenses include murder, kidnapping/abduction, forcible rape, forcible sodomy, sexual assault with object, forcible fondling, incest, statutory rape, aggravated assault, simple assault, intimidation, stalking, commercial sex acts or involuntary servitude.”¹²¹ Domestic violence victims can be: “adults or minors who are current or former spouses; adults or minors who live together or who have lived together; adults or minors who are dating or who have dated or who have or had a sexual relationship, but does not include fraternization between two individuals in a business or social context; adults or minors related by blood or adoption; adults or minors who are related or were formerly related by marriage; or Adult or minor children of a person in a relationship” previously listed.¹²² The number of domestic violence offenses in Tennessee has decreased since 2016 but remains high with 71,263 domestic violence offenses in 2019 – the equivalent of one domestic violence offense every 7.4 minutes.¹²³ Healthy People 2030 notes, “In addition to the potential for death, disability, and other injuries, people who survive violent crime endure physical pain and suffering and may also experience mental distress and reduced quality of life. Specific examples of detrimental health effects from exposure to violence and crime include asthma, hypertension, cancer, stroke, and mental disorders.”¹²⁴

¹¹⁸ Federal Bureau of Investigation
FBI Bureau of Investigation, Annual Domestic Violence Report
Federal Bureau of Investigation
FBI Bureau of Investigation, Annual Domestic Violence Report

¹¹⁹ 2019 FTS Code Title 39 – Criminal Offenses – Chapter 1 – Offenses Against Person Part 1 – Assaultive Offenses 39-3-111 – Domestic Assault, Accessed December 2022 https://law.justia.com/codes/tennessee/2010/pdf_39/chapter_12/part_1_39-3-111/

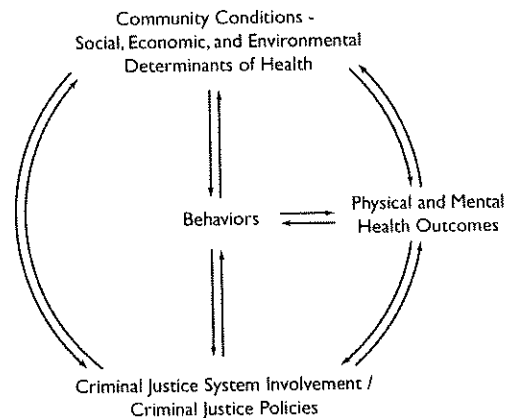
¹²⁰ FBI Bureau of Investigation, Annual Domestic Violence Report
¹²¹ Healthy People 2030, Crime and Violence: The Current Situation, Accessed December 2022 <https://healthypeople.gov/2030/about/section-10/crime-and-violence/>



Justice-Involvement and Health

Justice-involvement can lead to poorer health outcomes for both individuals directly involved in the justice system and their family members. Human Impact Partners, a nonprofit focused on centering equity within public health, developed a Criminal Justice and Health Framework that showcases the cyclical relationship between social determinants of health, justice involvement and individual health.¹

Criminal Justice and Public Health Framework



Individuals who are socially and economically disadvantaged are more likely to become involved in the criminal justice system. Similarly, individuals with health challenges, particularly behavioral and mental health challenges, are more likely to become justice involved. Justice involvement itself then contributes to poorer health and socioeconomic outcomes. Even for individuals never convicted of a crime, justice involvement can have consequences such as economic losses due to disruptions in work schedules and poorer mental health. Formerly incarcerated individuals face reentry challenges including limited access to job opportunities, housing, and education.² Formerly incarcerated individuals are also more likely to develop severe chronic illness such as high blood pressure and dementia.

Family and children are also impacted by the justice involvement of a loved one. In 2016-2017, “7.7% of children in the U.S. aged 17 and under had experienced a parent or guardian serving jail time” which is considered an Adverse Childhood Experience (ACE).³ Children with a parent or guardian who is justice-involved are more likely to experience violence, depression, PTSD, and become justice-involved themselves, perpetuating the intergenerational cycle of justice-involvement, trauma, and poverty.

Data Sources:

1. Human Impact Partners. A Framework Connecting Criminal Justice and Public Health. 2016. <https://humanimpact.org/a-framework-connecting-criminal-justice-and-public-health/>
2. Pew Charitable Trust Organization, How Involvement in the Criminal Justice System Affects Health. 2018. <https://www.pewtrusts.org/en/research-and-analysis/data-visualizations/2018/how-involvement-in-the-criminal-justice-system-affects-health>
3. Healthy People 2030. Crime and Violence Literature Summary. <https://health.gov/healthypeople/objectives-and-data/browse-objectives/social-and-community-context/reduce-proportion-children-parent-or-guardian-who-has-served-time-jail-sdoh-05>

Infectious Disease

- Chlamydia** is the “most commonly reported bacterial sexually transmitted infection (STI) in the United States.”¹³⁰ In 2020, the rate of newly diagnosed chlamydia cases in Tennessee was 544.0 cases per 100,000 persons, compared to 481.3 in the United States.¹³¹ Chlamydia can be treated easily with antibiotics, but many people remain unaware they are infected if they do not experience symptoms and do not access testing. In 2019, the rate of diagnoses of human immunodeficiency virus, or **HIV**, infection in Tennessee was 13.4 per 100,000 persons aged 13+, compared to 13.2 in the United States.¹³² For both the Tennessee and the United States, the HIV rate decreased in 2020. However, 2020 HIV data reflect the impact of COVID-19 (intermittent clinic closures, reduction in availability of services resulting in delays in accessing HIV Prevention and care, limited staff capacity to investigate HIV laboratory reports) and should be interpreted with caution. While no cure for HIV currently exists, if appropriately treated HIV can be managed well for individuals living with HIV. The Tennessee Department of Health HIV/STD Program houses a site that provides “practical information on many of the HIV, AIDS, and STD prevention and care activities in Tennessee. You can use this site to gather basic disease facts, information

regarding counseling and testing, or infection statistics. In addition, this site provides information valuable to health care professionals including reporting, treatment, and legal information.”¹³³

The **Hepatitis C Virus (HCV)** is spread through exposure to infected blood, primarily through injection-drug use. In 2019, the rate of acute viral Hepatitis C in Tennessee was 3 reported cases per 100,000 persons, compared to 1.3 in the United States.¹³⁴ HCV can become chronic in more than half of infected individuals, infecting the liver, and leading to cirrhosis.¹³⁵ In 2019, the case rate for chronic HCV was 130.5 confirmed cases per 100,000 population. The TN Department of Health Viral Hepatitis Epidemiologic Profile Report can be viewed online with more local data.¹³⁶

Influenza can lead to serious illness, hospitalization and death, accounting for 1,549 deaths in 2020 making it the 7th leading cause of death in Tennessee.¹³⁷ In 2020, Tennessee had the second highest influenza/pneumonia mortality rate in the country (18.5 deaths per 100,000 population), only surpassed by Mississippi (25.1 deaths per 100,000 population). **Influenza Vaccination** is the best way to protect against severe illness and death associated with the flu. In 2021, 43.92% of adults in Tennessee received a seasonal flu vaccine, compared to 45.10% nationally.¹³⁸

In 2020, Tennessee had the 2nd highest influenza/pneumonia mortality rate in the country.

In 2020, COVID-19 was the 3rd leading cause of death in Tennessee. As of December 24, 2022, 28,577 Tennesseans have died due to COVID-19 since the first recorded death in early 2020. **COVID-19 Vaccination** protects against COVID-19 as cases, hospitalizations, and deaths are higher among those not fully vaccinated. Among adults aged 65 and over, who are most at risk for severe illness and death as a result of COVID-19, 86.3% of Tennesseans are fully vaccinated, defined as 2 doses of Pfizer/Moderna or 1 dose of Janssen).¹³⁹ In the United States, 93.4% of older adults are fully vaccinated against COVID-19. Among all Tennesseans, only 55.9% are fully vaccinated, compared to 68.5% of all people in the United States.¹⁴⁰ Detailed data on COVID-19 vaccination including booster data is available through the Tennessee Department of Health and through the CDC.

For real time updated data on infectious diseases in Tennessee, visit the TN Department of Health’s Division of Communicable and Environmental Diseases and Emergency Preparedness webpage.¹⁴¹

¹³³ Tennessee, TN Dept of Health HIV/HIV Program website, <http://www.tn.gov/health/health-practice-and-prevention/hiv-hiv-program/>
CDC, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention

¹³⁴ CDC, Viral Hepatitis, Division for Field Programs, website. Accessed December 28, 2022 at <https://www.cdc.gov/hepatitis/tb/about-hepatitis/>

¹³⁵ Tennessee, TN Dept of Health TN Viral Hepatitis Epidemiologic Profile, 2020 Report view

<https://www.tn.gov/comm-environmental-diseases-and-emergency-preparedness/2020-2021-viral-hepatitis-2020-report/> 2020 Report view

¹³⁶ CDC, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention

¹³⁷ <http://www.tn.gov/health/practice-and-prevention/communicable-diseases-and-emergency-preparedness/influenza-pneumonia/>

Tennessee, Department of Health, Behavioral Risk Factor Surveillance System

¹³⁸ Center for Disease Control and Prevention, COVID Data Tracker, Atlanta, GA, U.S. Department of Health and Human Services, CDC, 2022

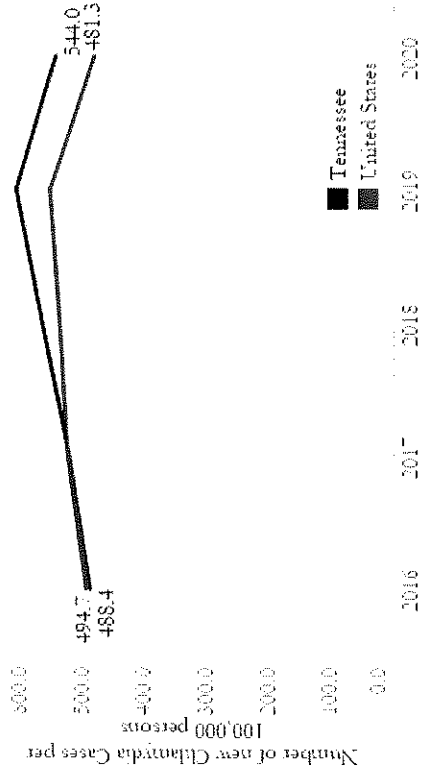
¹³⁹ Center for Disease Control and Prevention, COVID Data Tracker, Atlanta, GA, U.S. Department of Health and Human Services, CDC, 2022

¹⁴⁰ Tennessee, TN Dept of Health, Division of Communicable and Environmental Diseases and Emergency Preparedness website

¹⁴¹ Tennessee, TN Dept of Health, Division of Communicable and Environmental Diseases and Emergency Preparedness website

Chlamydia

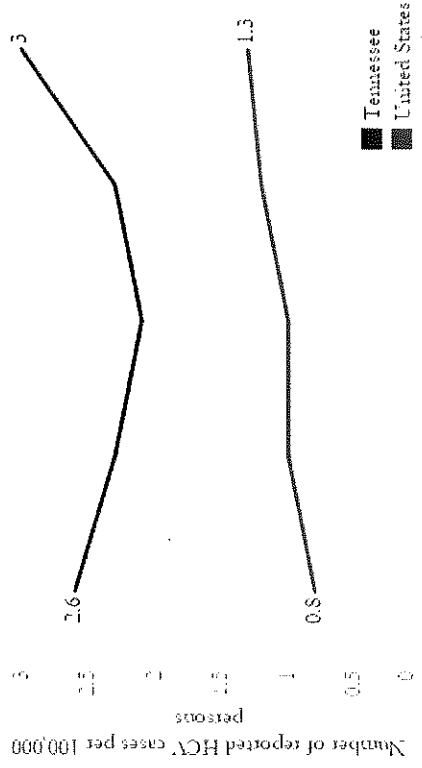
Number of newly diagnosed chlamydia cases per 100,000 persons.



Data Source: TN: TN Department of Health Division of Communicable and Environmental Disease and Emergent Pathogens; US: CDC STD Surveillance Report, 2020.

Hepatitis C

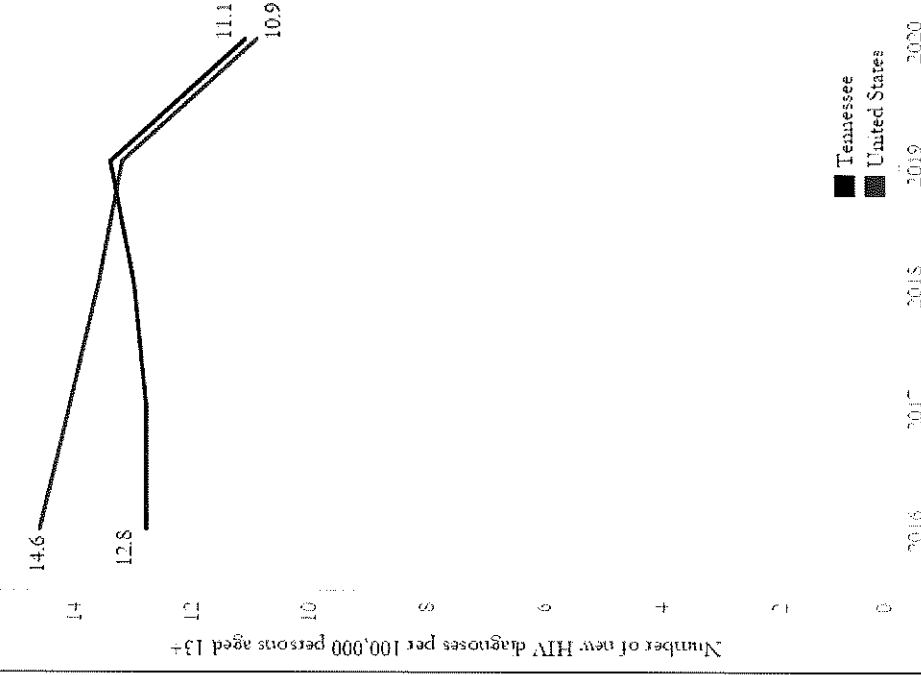
Number of reported cases of acute viral Hepatitis C per 100,000 persons.



Data Source: CDC, National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention

HIV

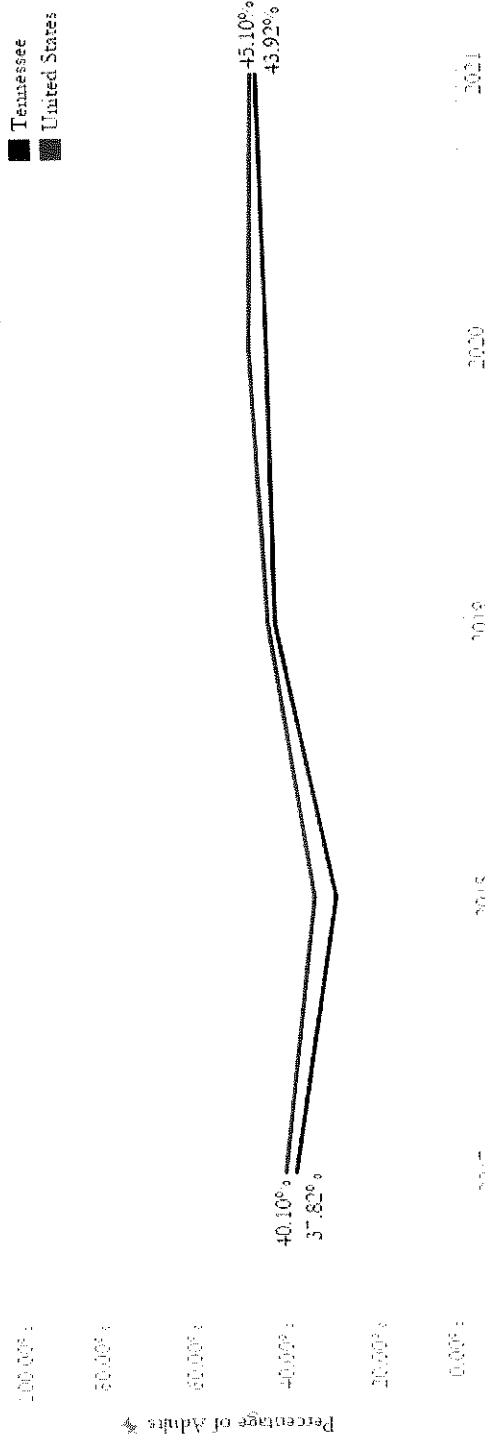
Number of new HIV diagnoses per 100,000 persons aged ≥13 years.



Data Source: CDC, National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention
 Data Note: 2020 HIV data reflect the impact of COVID-19 intermittent clinic closures, reduction in availability of services resulting in delays in accessing HIV Prevention and care, limited staff capacity to investigate HIV laboratory reports, and should be interpreted with caution.

Influenza Vaccination

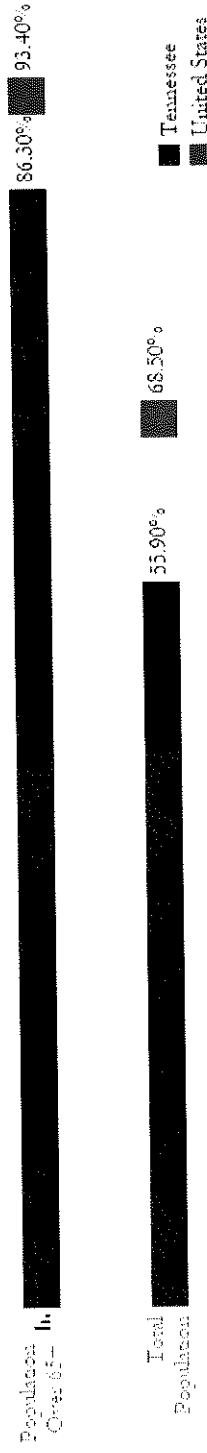
Percentage of adults in Tennessee who reported receiving a seasonal flu vaccine in the past 12 months.



Data Source: Tennessee Department of Health, Behavioral Risk Factor Surveillance System

COVID-19 Vaccinations

Percentage of Tennesseans fully vaccinated (2 doses of Pfizer/Moderna OR 1 dose of Janssen) against COVID-19 as of November 2, 2022.



Data Source: Centers for Disease Control and Prevention, COVID Data Tracker, Atlanta, GA; US Department of Health and Human Services, CDC; 2022

Health Indicators

- In 2021, 14.10% of Tennesseans have three or more **Chronic Conditions**, compared to 9.6% in the United States.¹⁴²
- In 2021, 14.0% of adults in Tennessee had **Diabetes**, compared to 11.1% in the United States.¹⁴³
- In 2021, 71.33% of Tennessee adults reported doing **Physical Activity** or exercise during the past month outside their regular job.¹⁴⁴
- In 2021, 19.67% of adults in Tennessee currently **Smoke**, compared to 14.40% in the United States.¹⁴⁵
- In Tennessee, the percent of adults who **Binge Drink** has decreased from 17.4% in 2017 to 15.3% in 2021.¹⁴⁶
- **Nonfatal drug overdoses** resulting in outpatient visits or inpatient stays increased in 2020 to a total of 25,796.¹⁴⁷
- There were 3,032 **fatal drug overdoses** in Tennessee in 2020, up from 1,776 in 2017.¹⁴⁸
- **Premature Death** is defined as the Years of Potential Life Lost (YPLL) before aged 75 per 100,000 persons. Tennesseans lost 11,467.3 years per 100,000 persons in 2020, compared to 9,401.9 in the United States.¹⁴⁹

In 2021, 14.10% of Tennesseans had three or more **Chronic Conditions**, compared to 9.6% in the United States.¹⁵⁰ Managing multiple chronic conditions such as arthritis, diabetes and cardiovascular disease is complex and costly for both patients and health care systems. **Diabetes** specifically is costly with people with diabetes having “medical expenditures approximately 2.3 times higher than what expenditures would be in the absence of diabetes.”¹⁵¹ In 2021, 14.0% of adults in Tennessee had diabetes, compared to 11.1% in the United States.¹⁵²

Key behaviors that impact health in adults include physical activity, smoking, and drinking. **Physical Activity** improves overall health and can prevent health conditions such as obesity and heart disease. In 2021, 71.33% of Tennessee adults reported doing physical activity or exercise during the past month outside their regular job.¹⁵³ In the United States, 76.3% of adults were physically active in 2021. Smoking can lead to cancer, heart disease, diabetes and more. As of 2021, 19.67% of adults in Tennessee currently **Smoke**, compared to 14.40% in the United States. While the percent of adults in Tennessee has decreased slightly since 2017, the percentage of current smokers in Tennessee has remained higher than the

¹⁴² Tennessee Department of Health, Behavioral Risk Factor Surveillance System.

¹⁴³ Tennessee Department of Health, Behavioral Risk Factor Surveillance System.

¹⁴⁴ Tennessee Department of Health, Behavioral Risk Factor Surveillance System.

¹⁴⁵ Tennessee Department of Health, Behavioral Risk Factor Surveillance System.

¹⁴⁶ Tennessee Department of Health, Behavioral Risk Factor Surveillance System.

¹⁴⁷ Tennessee Department of Health, Office of Informatics and Analytics, Controlled Substance Monitoring Database.

¹⁴⁸ Tennessee Department of Health, Office of Informatics and Analytics, Controlled Substance Monitoring Database.

¹⁴⁹ Centers for Disease Control and Prevention, National Center for Health Statistics, WONQARS.

¹⁵⁰ Tennessee Department of Health, Behavioral Risk Factor Surveillance System.

¹⁵¹ American Diabetes Association, Statistics: The Cost of Diabetes. Accessed December 2022 from [http://diabetes.org/about-us/statistics/cost-diabetes/#:~:text=People%20with%20diabetes%20incurred%20an%20average%20of%20\\$14,000%20for%20diabetes](http://diabetes.org/about-us/statistics/cost-diabetes/#:~:text=People%20with%20diabetes%20incurred%20an%20average%20of%20$14,000%20for%20diabetes).

¹⁵² Tennessee Department of Health, Behavioral Risk Factor Surveillance System. Data Note: U.S. Data for 2017 and 2018 is missing.

¹⁵³ Tennessee Department of Health, Behavioral Risk Factor Surveillance System.

¹⁵⁴ https://www.cdc.gov/nchs/data/behav/brfss/brfss_2019_2021.pdf.

United States.¹⁵⁴ In Tennessee, the percent of adults who **Binge Drink** has decreased from 17.4% in 2017 to 15.3% in 2021.¹⁵⁵ Binge-drinking is defined as males having five or more drinks on one occasion or females having four or more drinks on one occasion. In the United States, the percent of adults who are binge drinkers has slightly increased from 13.14% in 2017 to 14.2% in 2021. According to the SAMHSA, “Among people aged 12 or older in Tennessee, the annual average percentage of alcohol use disorder in the past year decreased between 2002–2004 and 2017–2019.”¹⁵⁶

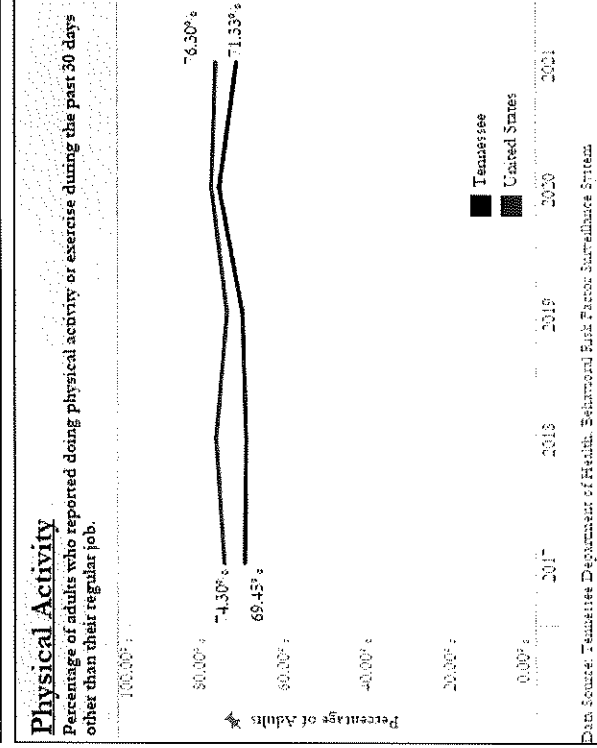
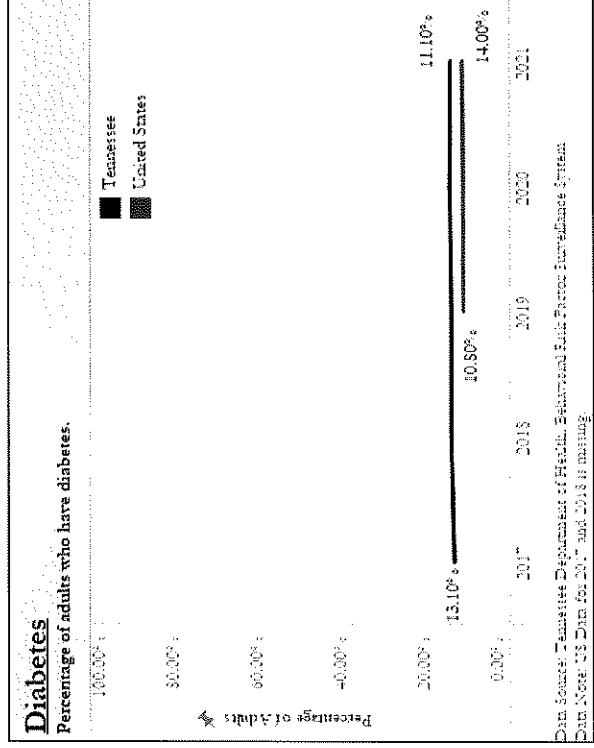
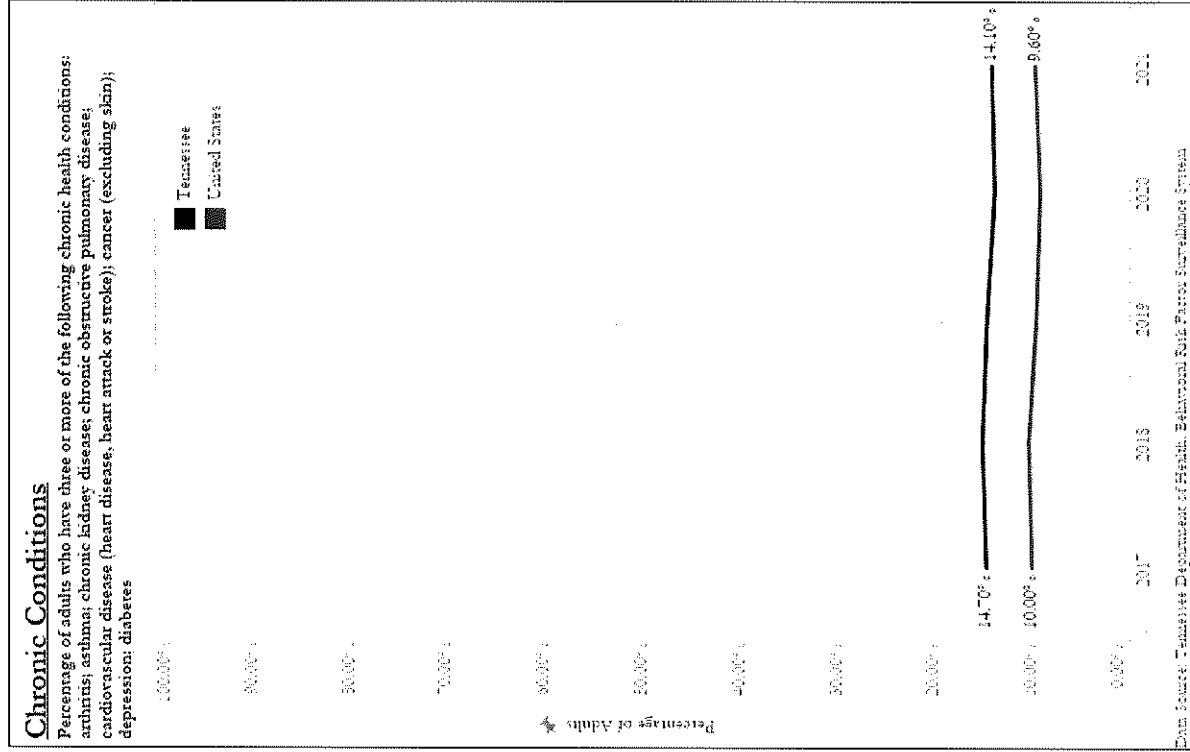
Drug overdoses and fatalities increased since the early 2000s largely because of opioid use disorder. While drug overdoses have increased across the United States, drug overdoses in Tennessee have increased faster than in the United States.¹⁵⁷ **Nonfatal drug overdoses** resulting in outpatient visits or inpatient stays increased in 2020 to a total of 25,796.¹⁵⁸ From 2017-2019, the number of nonfatal drug overdoses remained below 24,000. Nonfatal drug overdoses that do not result in hospitalization are not reported using this data set and therefore this data is expected to be a significant undercount of the number of nonfatal drug overdoses occurring across Tennessee. There were 3,032 **Fatal Drug Overdoses** in Tennessee in 2020, up from 1,776 in 2017.¹⁵⁹ Fatal drug overdoses contribute to premature death. **Premature Death** is defined as the Years of Potential Life Lost (YPLL) before aged 75 per 100,000 persons. Tennesseans lost 11,467.3 years per 100,000 persons in 2020, compared to 9,401.9 in the United States.¹⁶⁰ YPLL increased in 2020 in both Tennessee and the United States, in part due to COVID-19.

¹⁵⁴ Tennessee Department of Health, Behavioral Risk Factor Surveillance System.
¹⁵⁵ Tennessee Department of Health, Behavioral Risk Factor Surveillance System.
¹⁵⁶ SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2017–2019. Accessed December 2021 at https://www.samhsa.gov/data/assets/data-files/report/nprc2017/Tennessee_BEH_Tennessee_Volume6.pdf.

¹⁵⁷ Kaiser Family Foundation, Mental Health and Substance Use among Teenagers, Tennessee. Accessed December 2022 ([https://www.kaiserfamilyfoundation.org/teen-ages-tennessee/](https://www.kff.org/teen/mental-health-and-substance-use/teen-ages-tennessee/)).

¹⁵⁸ Tennessee Department of Health, Office of Information and Analytics, Controlled Substance Monitoring Database.
¹⁵⁹ Tennessee Department of Health, Office of Information and Analytics, Controlled Substance Monitoring Database.

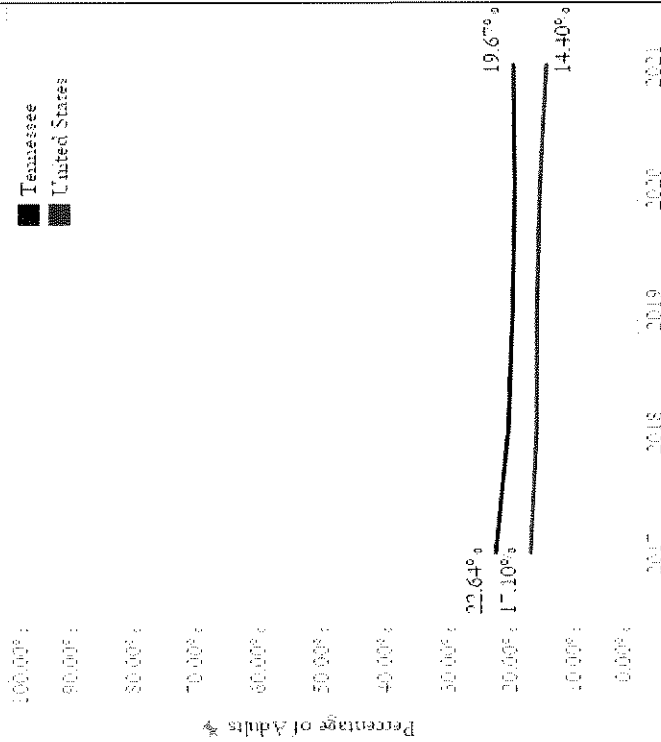
¹⁶⁰ Center for Disease Control and Prevention, National Center for Health Statistics, WISQARS.



Adult Smoking

Percentage of adults who are current smokers.

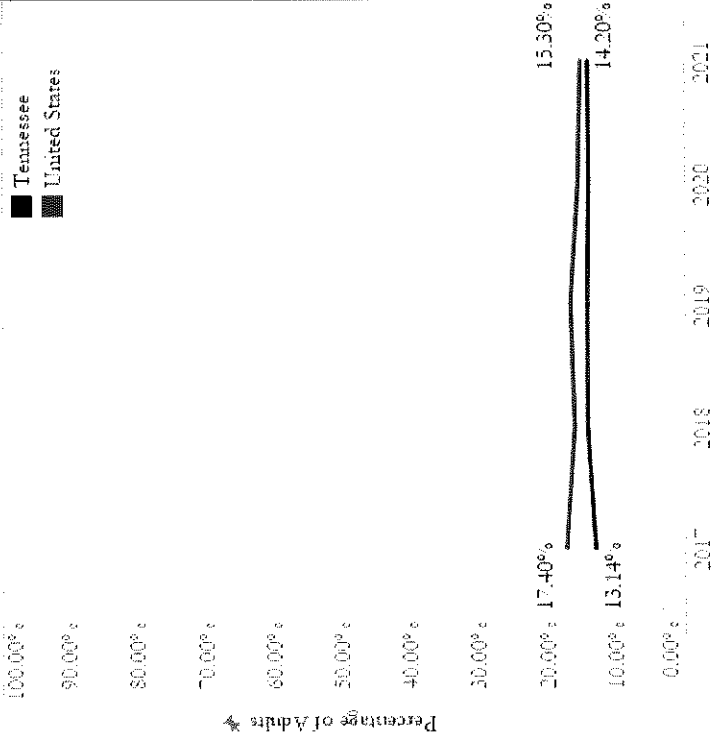
In 2021, 19.6% of adults in Tennessee were current smokers, compared to 14.40% in the United States. While the percent of adults in Tennessee has decreased slightly since 2017, the percent of current smokers in Tennessee has remained above the United States.



Data Source: Tennessee Department of Health, Behavioral Risk Factor Surveillance System

Binge Drinking

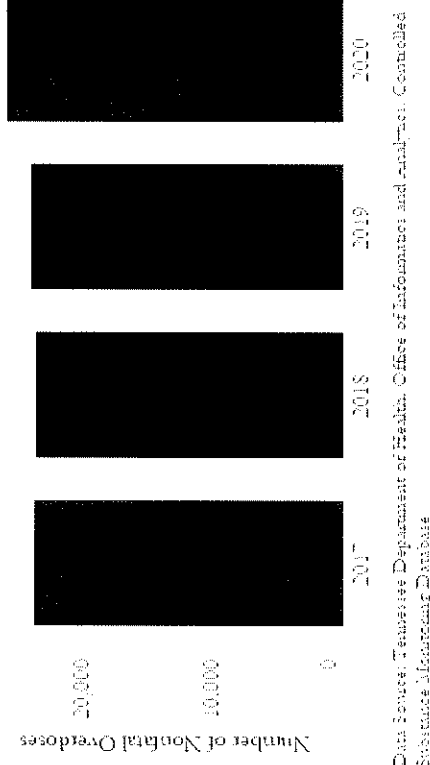
Percentage of adults who are binge drinkers (males having five or more drinks on one occasion, females having four or more drinks on one occasion).



Data Source: Tennessee Department of Health, Behavioral Risk Factor Surveillance System

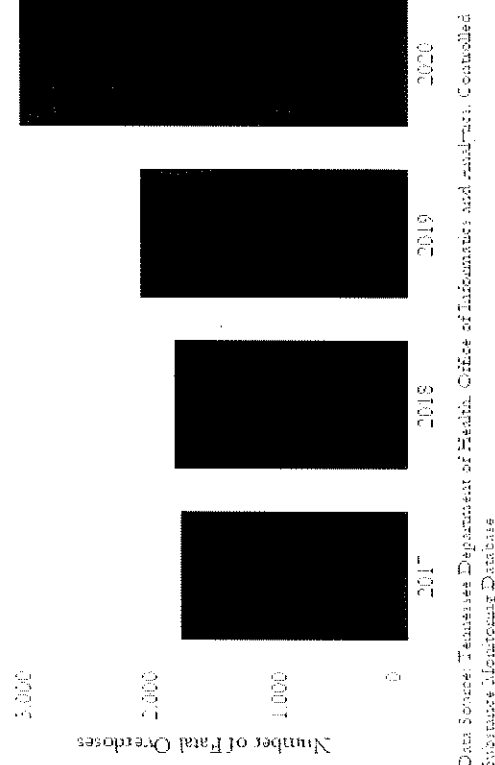
Nonfatal Overdoses

Number of drug overdose outpatient visits and inpatient stays caused by non-fatal acute poisonings due to the effects of drugs, regardless of intent in Tennessee.



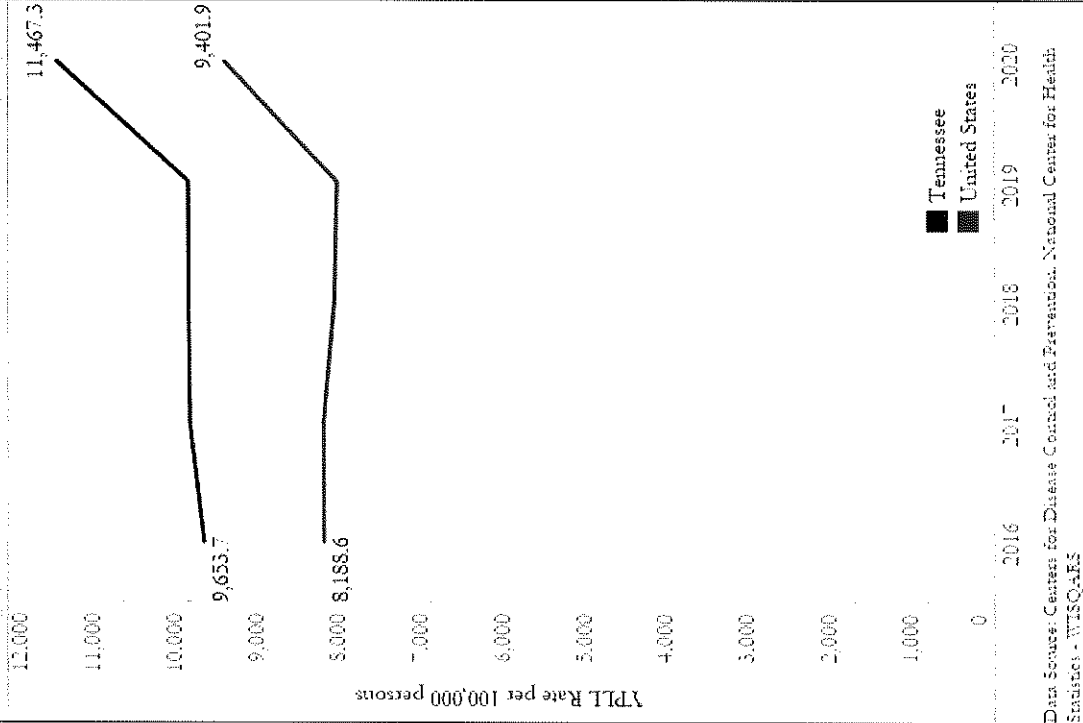
Fatal Overdoses

Number of all drug overdose deaths in Tennessee.



Premature Death

Crude Rate of Years of Potential Life Lost (YPLL) before Age 75 for 10 Leading Causes of Death (All Causes) per 100,000 persons.



Mental Health

- In 2021, 18.01% of Tennessee adults reported **Frequent Mental Distress**.¹⁶¹
- **Suicidal Ideation** in Tennessee increased steadily from 2016-2019 before decreasing to 60.1 ED visits/Inpatient hospitalizations per 10,000 persons in 2020.¹⁶²
- In 2020, there were 13.1 emergency department visits and inpatient hospitalizations for intentional self-harm injury, or **suicide attempt**, per 10,000 persons in Tennessee, down from 16.2 in 2016.¹⁶³
- In 2021, Tennessee's adult **Suicide Mortality** rate was 21.97 deaths due to intentional self-harm per 100,000 adults.¹⁶⁴

Frequent Mental Distress¹⁶⁵ in adults has increased in both Tennessee and the United States in recent years. In 2021, 18.01% of Tennessee adults reported their mental health was not good for at least 14 days of the past 30 days, up from 13.72% in 2017. In the United States, 14.7% of adults reported frequent mental distress, up from 12.40% in 2017. Mental illness including depression can lead to increased suicidal ideation. **Suicidal Ideation**¹⁶⁶ in Tennessee increased steadily from 2016-2019 before decreasing to 60.1 ED visits/Inpatient hospitalizations per 10,000 persons in 2020. Similar to other hospital-based data, values are expected to be impacted due to COVID-19 as changes in patient decision-making and hospital availability occurred. In 2020, there were 13.1 emergency department visits and inpatient hospitalizations for intentional self-harm injury, or **Suicide Attempts**, per 10,000 persons in Tennessee, down from 16.2 in 2016.¹⁶⁷ Suicide attempts not requiring hospitalization are not reported in this data and therefore these values are expected to be an undercount of the true number of suicide attempts in Tennessee. In 2021, the **Suicide Mortality** rate was 21.97 deaths due to intentional self-harm per 100,000 adults (>18) in Tennessee.¹⁶⁸ The Tennessee Department of Health's Suicide Prevention program releases detailed annual data reports on suicide with more information on suicide by age.¹⁶⁹

¹⁶¹ Tennessee Department of Health, Behavioral Risk Factor Surveillance System.

¹⁶² Tennessee Department of Health, Hospital Discharge Data system.

¹⁶³ Tennessee Department of Health, Hospital Discharge Data system.

¹⁶⁴ Tennessee Department of Health, Death Statistics - US Office of Vital Statistics.

¹⁶⁵ Tennessee Department of Health, Behavioral Risk Factor Surveillance System.

¹⁶⁶ Tennessee Department of Health, Hospital Discharge Data system.

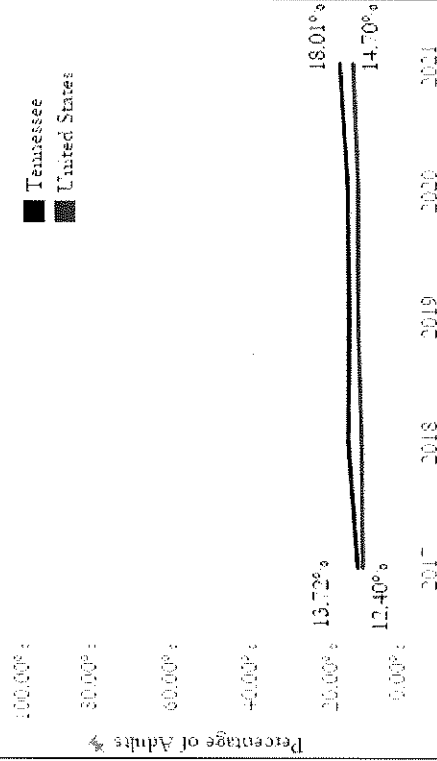
¹⁶⁷ Tennessee Department of Health, Hospital Discharge Data system.

¹⁶⁸ Tennessee Department of Health, Death Statistics - US Office of Vital Statistics.

¹⁶⁹ Tennessee Department of Health, Suicide Data and Surveillance Information, <https://www.tn.gov/the-tn-department-of-health/suicide-prevention-program>, <https://www.tn.gov/the-tn-department-of-health/suicide-prevention-program>.

Frequent Mental Distress

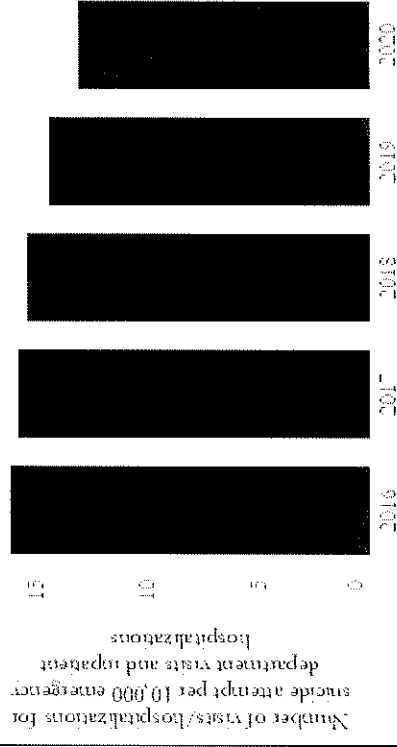
Percentage of adults who reported their mental health was 'not good' 14 or more days during the past 30 days.



Data Source: Tennessee Department of Health, Behavioral Risk Factor Surveillance System

Nonfatal Intentional Self-Harm Injury

Number of visits/hospitalizations for nonfatal intentional self-harm injury per 10,000 emergency department visits and inpatient hospitalizations in Tennessee.



Data Source: Tennessee Department of Health, Hospital Discharge Data System

Suicidal Ideation

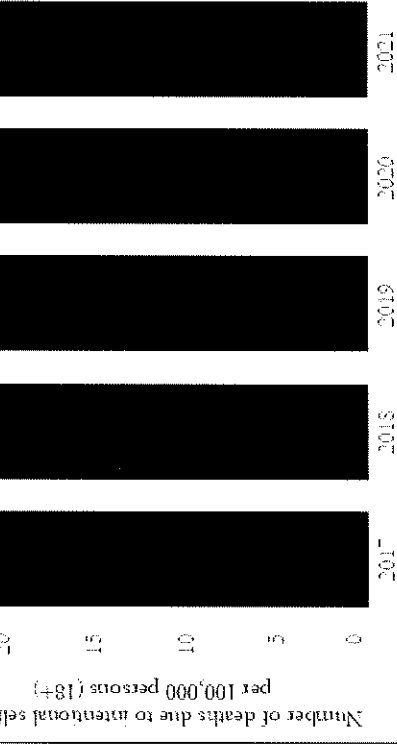
Number of visits/hospitalizations with suicidal ideation per 10,000 emergency department visits and inpatient hospitalizations in Tennessee.



Data Source: Tennessee Department of Health, Hospital Discharge Data System





Suicide Mortality

Number of deaths due to intentional self-harm per 100,000 persons (18+).



Data Source: Tennessee Department of Health, Death Statistics

Older Adults

- In 2019, 9.7% of older adults were living in poverty.¹⁷⁰ 
- In 2020, 13.5% of the older adult population were **Grandparents Raising Grandchildren** or serving as primary caregivers to children.¹⁷¹ 
- In 2020-2021, there were 8,753 Adult Protective Services abuse investigations, including investigations into **Elder Abuse**.¹⁷² 
- In 2020, 281,636 older adults in Tennessee, or 26.2% of the older adult population, were living alone, a key risk factor for **Social Isolation**.¹⁷³ 
- In 2018 and 2020, almost 30% of Tennesseans aged 65 and older reported a **Fall**.¹⁷⁴
- In 2021, 26.32% of Tennesseans over age 45+ were serving as a **Caregiver** to a loved one, including older adults.¹⁷⁵
- In 2021, almost 17% of Tennesseans aged 45 years and older reported experiencing **Subjective Cognitive Decline**, compared to 13% in 2019.¹⁷⁶

Assessing the health of older adults and factors that influence aging is of the utmost importance as the proportion of older adults is expected to grow in the coming decades. The increase in the older adult population will also increase the demand for health care and long-term support services. A 2022 report by the Tennessee Comptroller stated “The number of Tennessee seniors aged 60 and over is expected to increase by 30 percent from 1.6 million in 2020 to 2.1 million in 2040. The number of those aged 80 and over in Tennessee is forecast to double during this time.”¹⁷⁷

In 2019, 9.7% of older adults in Tennessee were living below the poverty level. The percentage of adults in poverty has stayed constant for the past several years and has not differed significantly from the United States. **Poverty** can have a significant impact on an older adult’s ability to access critical medical care, purchase prescription drugs, and be food secure. For many older adults living on a fixed income, caring for others can further strain finances. Older adults may become the

U.S. Census Bureau, American Community Survey.
U.S. Census Bureau, American Community Survey.
Tennessee Department of Human Services, Annual Report.
U.S. Census Bureau, American Community Survey.
Tennessee Department of Health, Behavioral Risk Factor Surveillance System.
Tennessee Department of Health, Behavioral Risk Factor Surveillance System.
Tennessee Department of Health, Behavioral Risk Factor Surveillance System.
Tennessee Comptroller of the Treasury, Office of Research and Education, Accountability and Long-Term Care in Tennessee: Trends and Options, April 2022. Accessed December 2022 at <https://comptroller.tn.gov/wp-content/uploads/2022/11/22-Long-Term-Care-in-Tennessee.pdf>.

primary caregiver for children in situations such as parental incarceration. The number of older adults serving as primary caregivers for children has increased in recent years particularly as a result of the increase in opioid use disorder and drug overdoses affecting mid-aged adults. In 2020, 144,878 older adults in Tennessee, or 13.5% of the older adult population, were **Grandparents Raising Grandchildren** or older adults serving as primary caregivers to children.

Adult Protective Services (APS) investigates reports of abuse, neglect (including self-neglect) and financial exploitation among adults and older adults. Adults and cases must meet certain criteria for the allegation of maltreatment to be investigated, and criteria varies state to state. For example, in 2020 98.2% of states investigated neglect allegations, but only 39.3% of states investigated abandonment allegations.¹⁷⁸ Tennessee’s Adult Protective Services manual can be viewed on the TN Department of Human Services’ website.¹⁷⁹ In 2020-2021, Tennessee’s APS investigated 8,753 reports, including allegations of **Elder Abuse**. Additionally, in 2022, the Tennessee Elder Abuse Task Force released a report “identifying the financial exploitation of older adults, reviewing best practicing, and sharing recommendations to address regulatory gaps.” The full report including additional data on elder abuse is available online.¹⁸⁰

Social Isolation in older adults is a risk factor for serious health problems including dementia and premature death. Older adults who lose loved ones, have chronic illness, hearing loss or live alone are more likely to be socially isolated. In 2020, 281,636 older adults in Tennessee, or 26.2% of the older adult population, were living alone. Living alone can be additionally dangerous for older adults at risk of **Falls**. Falls in older adults can lead to severe injuries such as hip fractures and even death. In the United States in 2019, “emergency departments recorded 3 million visits for older adults falls” and falls cost “\$50 billion in medical costs annually, with ¾ paid by Medicare and Medicaid.”¹⁸¹ In 2018 and 2020, almost 30% of Tennesseans aged 65 and older reported falling.¹⁸²

Caregivers, most often family members such as an adult child or spouse, may step up to meet the needs of an aging loved one. In 2021, 26.32% of Tennesseans over age 45+ were serving as a caregiver to a loved one, including older adults. **Caregiving** is particularly prevalent among families of individuals living with dementia. Caregivers of individuals with dementia are more likely to experience stress and chronic health conditions such as high blood pressure compared to non-dementia caregivers. In 2021, 361,000

In 2021, 361,000 dementia caregivers in Tennessee provided 489 million hours of unpaid care valued at \$6.901 billion.

dementia caregivers in Tennessee provided 489 million hours of unpaid care valued at \$6.901 billion. In 2019, there were 3,252 deaths from Alzheimer’s Disease in Tennessee, making it one of the state’s leading causes of death. This is a 217.6% increase since 2000 and the 7th highest Alzheimer’s death rate in the United States.¹⁸³

Individuals with **Subjective Cognitive Decline** are more likely to develop dementia later in life. Therefore, monitoring the number of adults with subjective cognitive decline can be a predictor of disease burden in future years. In 2021, almost 17% of Tennesseans aged 45 years and older reported experiencing subjective cognitive decline, compared to 13% in 2019.¹⁸⁴ For county specific data, the TN Department of Health’s Office of Patient Care Advocacy houses county profiles on Alzheimer’s and older adults.¹⁸⁵

¹⁷⁸ Administration for Community Care, Adult Maltreatment Report 2020, Accessed December 2022 at https://aacc.gov/sites/default/files/programs_2021-10-2020_NA_MRS_Report_ADVA-final_1.pdf

¹⁷⁹ TN Department of Human Services, Publication and Manuals, Accessed December 2022 at <https://www.tn.gov/human-services/information-and-resources/dhs-publications.html>

¹⁸⁰ To view the 2022 TN Elder Abuse Task Force Report visit <https://www.tn.gov/2022/publications-reports/elder-abuse-task-force-report.html>

¹⁸¹ CDC, Older Adult Fall Prevention, Accessed December 2022 from <https://www.cdc.gov/falls/index.html>

¹⁸² Tennessee Department of Health, Behavioral Risk Factor Surveillance System, Alzheimer’s Association, 2022 Facts and Figures Report, Tennessee State Fact Sheet, Accessed December 2022 from <https://www.alz.org/facts-figures/2022.pdf>

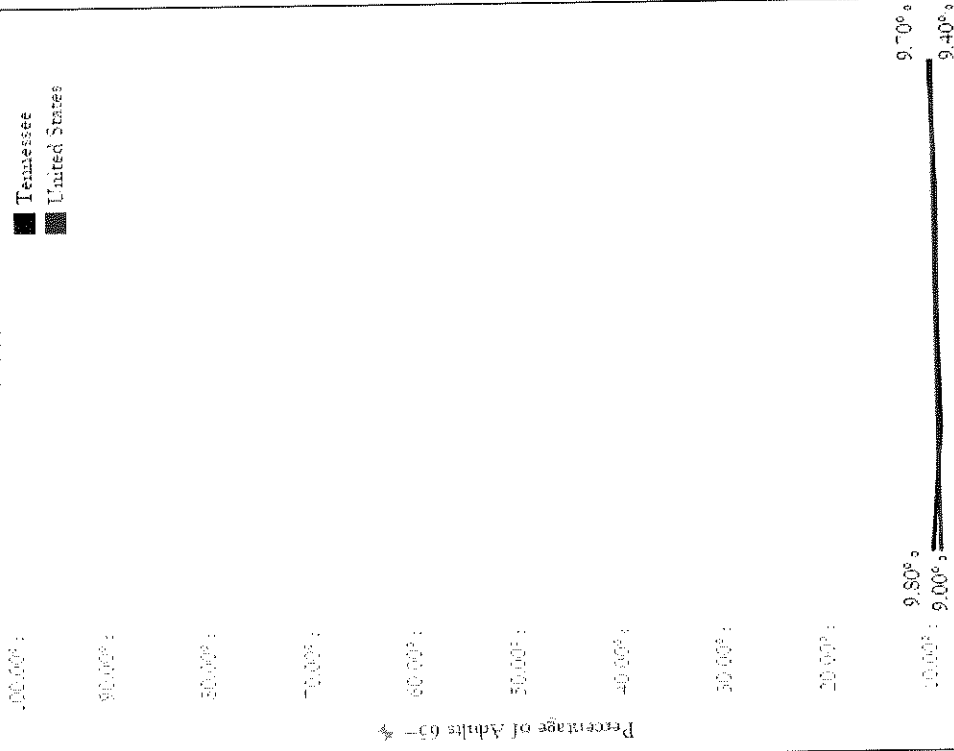
¹⁸³ Tennessee Department of Health, Behavioral Risk Factor Surveillance System

¹⁸⁴ To access the TN Department of Health’s Alzheimer’s County Profiles visit <https://www.tn.gov/health/health-program/office-of-patient-care-advocacy/alzheimer-research-and-policy/alzheimer-county-profiles.html>

¹⁸⁵ To view the TN Department of Health’s Alzheimer’s County Profiles visit <https://www.tn.gov/health/health-program/office-of-patient-care-advocacy/alzheimer-research-and-policy/alzheimer-county-profiles.html>

65+ Poverty

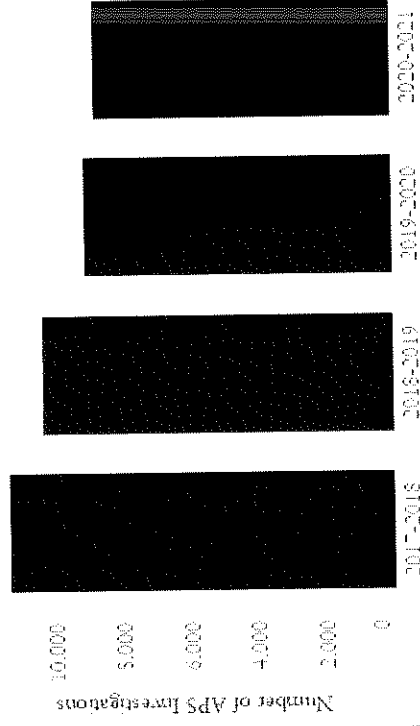
Percentage of adults ages 65 and older who live below the poverty level



Data Source: US Census Bureau, American Community Survey

Elder Abuse

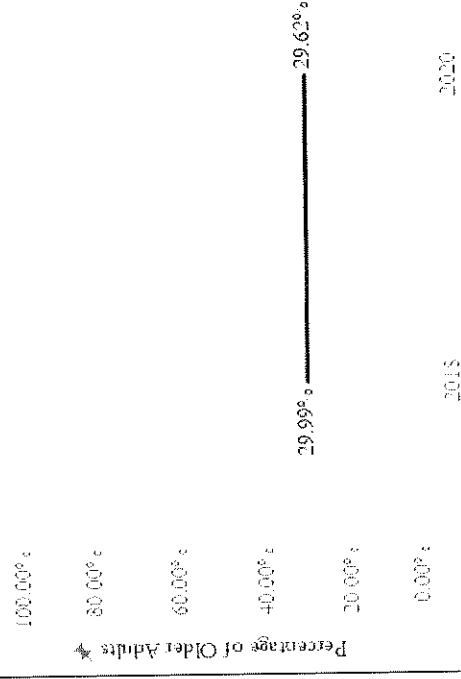
Number of Adult Protective Services abuse investigations.



Data Source: Tennessee Department of Human Services, Annual Report

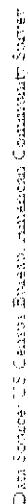
Falls in Older Adults

Percentage of adults ages 65 and older who reported falling in the past 12 months.

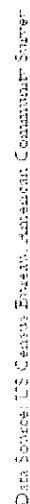


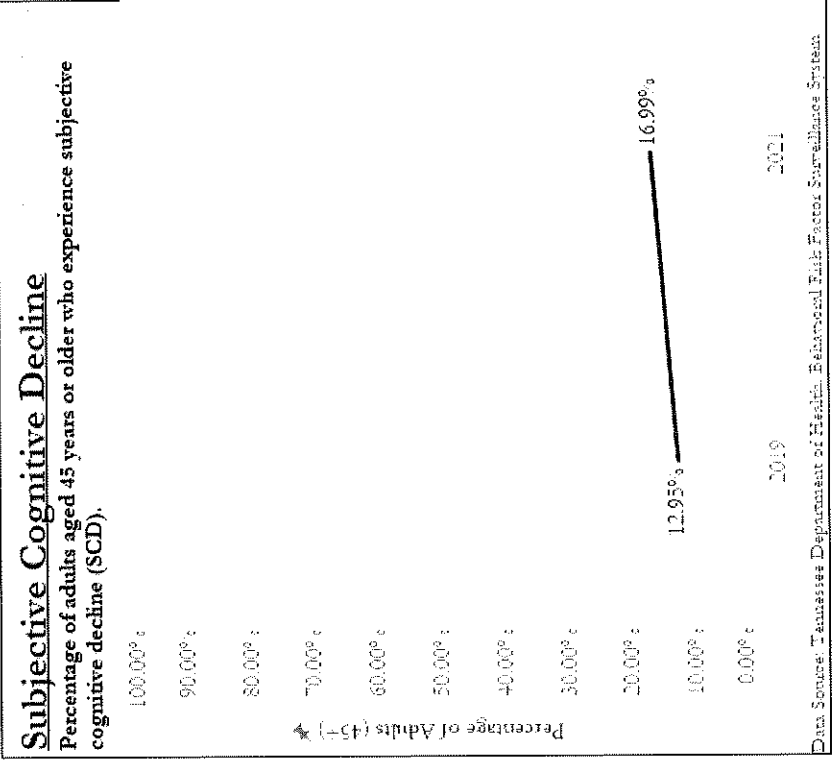
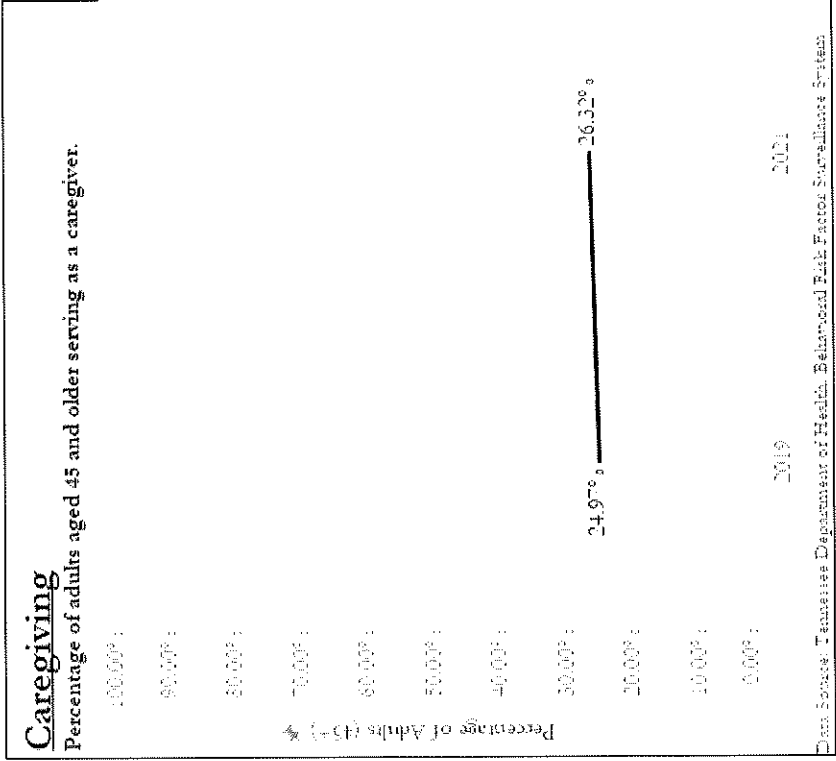
Data Source: Tennessee Department of Health, Behavioral Risk Factor Surveillance System

Percentage of population aged 65+ serving as a primary caregiver to a child. In 2020, 13.5% of older adults in Tennessee were grandparents raising grandchildren or serving as primary caregivers to children.



Percentage of population aged 65+ living alone.
In 2020, 26.2% of older adults in Tennessee were living alone.





Healthy Communities

The second component of the Department's vision of a Healthy Tennessee is Healthy Communities. A supportive and healthy community should have a healthy environment and a healthy system of care. The communities we live in influence every facet of our lives including our health behaviors, how we get to work or school, and what hospital we access in an emergency. By assessing the health of communities and considering how community health impacts individual health outcomes, larger efforts to improve health at the population health can be identified.

Healthy Evidence

To assess the health of Tennessee's environment, the State of Health report considers metrics across two areas: the built environment including housing and transportation and environmental health including the air we breathe and the water we drink. The CDC defines the built environment as "the physical makeup of where we live, learn, work, and play—our homes, schools, businesses, streets and sidewalks, open spaces, and transportation options."¹⁸⁶ However, the built can only be as healthy as the physical environment in which it is built. For example, a neighborhood may have adequate proximity to a park or greenway, but usability could still be limited by environmental health factors such as poor air quality. The health of the environment affects the air we breathe, the water we drink, and the land we live on. Additionally, environmental emergency events such as floods, tornados and heat waves can negatively impact our health and communities.

A Healthy Environment				
Severe Housing Problems	Severe Housing Cost Burden	Homelessness	Broadband Access	Access to Parks and Greenways
Transportation Disadvantaged Communities	Access to Vehicle	Driving Alone to Work	Long Commute-Driving Alone	Roadway Safety
Voter Participation	Civic Organizations	Social Advocacy Organizations	Volunteering	Water Quality
Community Water Fluoridation	Air Pollution-Particulate Matter	Heat Related ED Visits	Heat Related Hospitalizations	

© CDC, Division of Nutrition, Physical Activity, and Obesity, Built Environment Assessment,

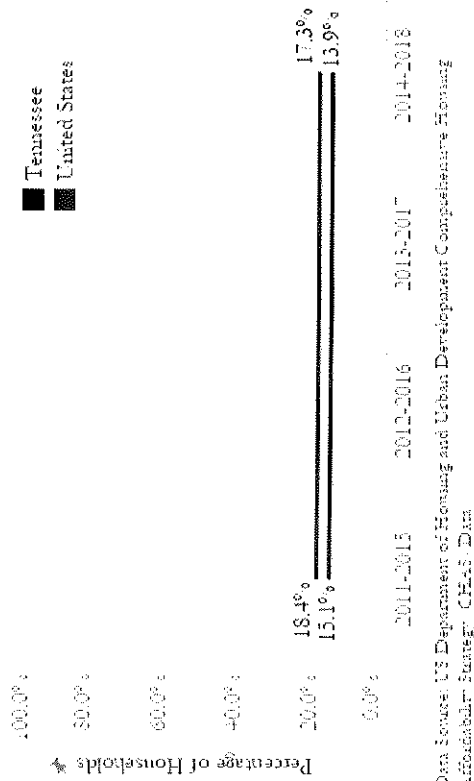
Housing and Parks

- Safe and stable housing is one of humanity's most basic needs but remains out of reach for many Tennesseans. In 2020, 7,256 Tennesseans were experiencing **Homelessness**, during the annual point-in-time count conducted to assess homelessness. As this data is collected at one specific time annually, it is expected to significantly undercount the persons in Tennessee who experience homelessness during a given year. The relationship between health and homelessness is cyclical. Poor health increases risk of experiencing homelessness and experiencing homelessness increases risk of poor health.¹⁹² As noted by the National Health Care for the Homeless Council, "no amount of health care can substitute for stable housing." Even for individuals who are housed, significant housing challenges that impact health can remain. From 2014-2018, 13.9% of Tennessee households had **Severe Housing Problems**, defined as having a least one of four problems (overcrowding, high housing costs, lack of kitchen facilities, or lack of plumbing facilities) compared to 17.3% in the United States during the same time. High housing cost specifically has been associated with increased odds of poor health including hypertension, arthritis, and cost-related health and prescription nonadherence.¹⁹³ In Tennessee from 2014-2018, 11.6% of Tennessee households experienced a **Severe Housing Cost Burden**, defined as spending more than 50% of their income on housing. Severe Housing Cost Burden in the U.S. was 13.9% during the same time period. An additional challenge to ensuring housing meets the needs of today's Tennesseans is **Broadband Internet Connection**. Broadband access is necessary for accessing everything from educational classes, job opportunities, and telehealth appointments to staying connected with family and friends. Broadband access in Tennessee has been increasing in recent years, and in 2019, 83% of households in Tennessee had broadband internet connection. The physical makeup of the community outside the front door also impacts health. For example, individuals with **Access to Parks and Greenways** are more likely to be physically active. In 2022, 62.0% of Tennessee had adequate access to parks and greenways.

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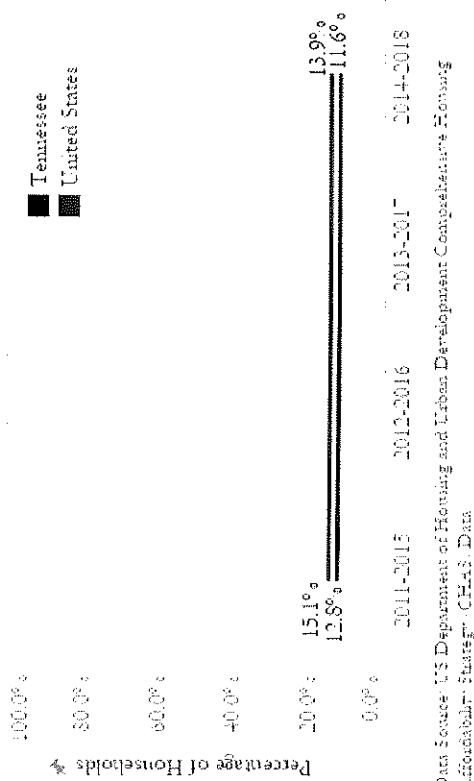
Severe Housing Problems

Percentage of households with at least 1 of 4 housing problems: overcrowding, high housing costs, lack of kitchen facilities, or lack of plumbing facilities.



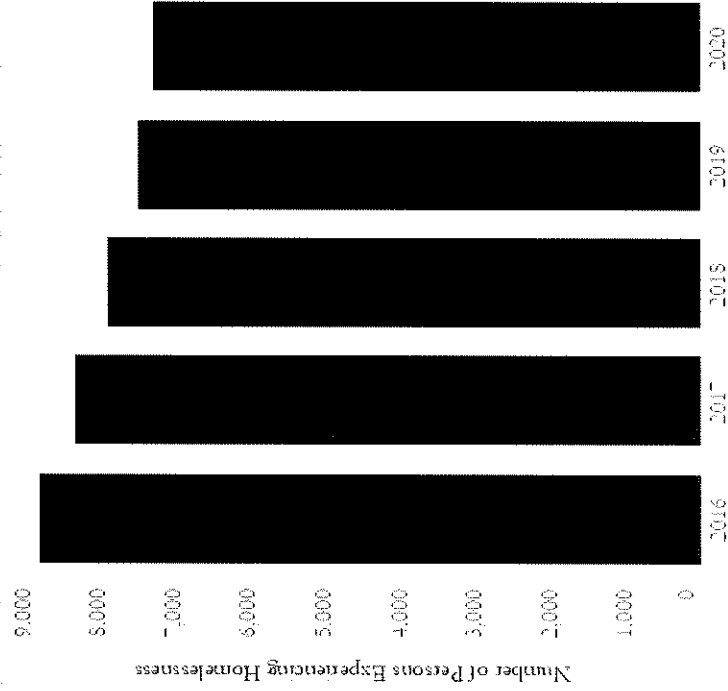
Severe Housing Cost Burden

Percentage of households that spend 50% or more of their household income on housing



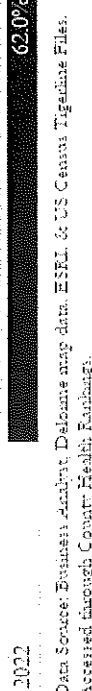
Homelessness

Annual point-in-time count of persons experiencing homelessness in Tennessee.



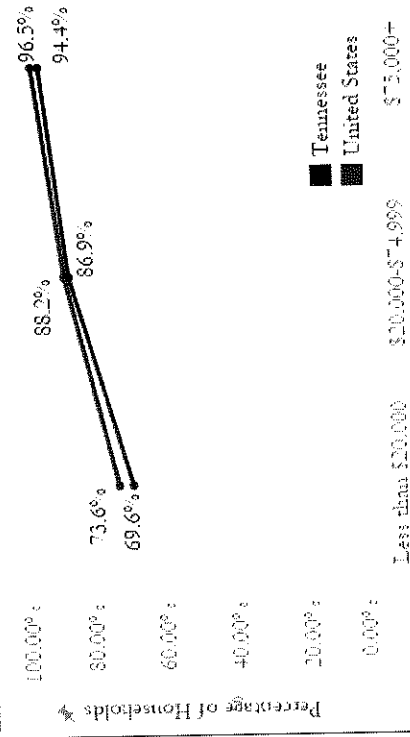
Access to Parks and Greenways

Percentage of population with adequate access to locations

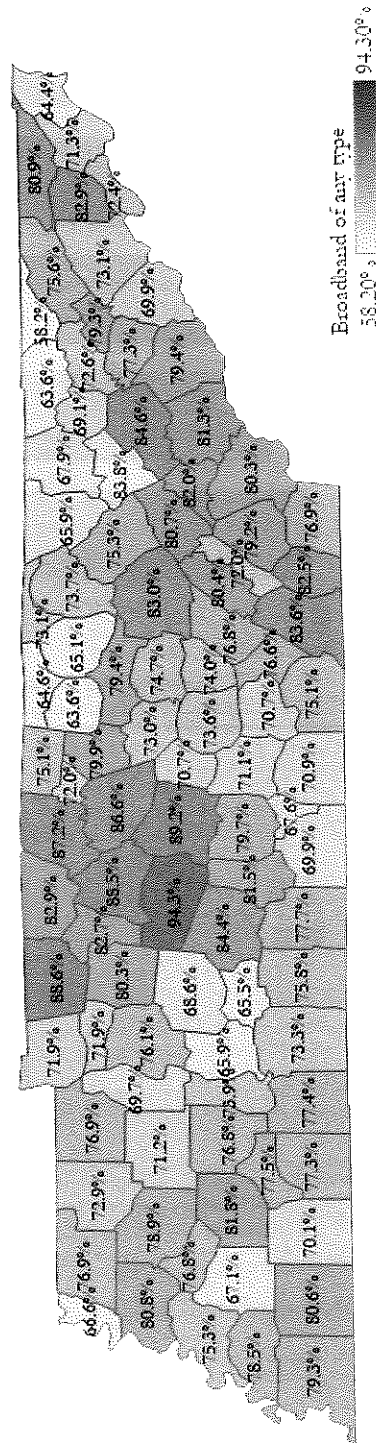


Broadband by Income

Percentage of households with broadband connection in 2020 by household income level.








Data Source: U.S. Census Bureau, American Community Survey, 2020 1-Year Estimate Public Use Data



SECRET

Transportation

- In 2022, 33.7% of Tennessee communities were **Transportation Disadvantaged Communities**¹⁹⁴ 
- In 2019, 18.4% of Tennessee workers aged 16 and over had **Access to a Vehicle**¹⁹⁵ 
- In 2019, 82% of workers aged 16 years and older were **Driving Alone to Work**¹⁹⁶ 
- In 2019, 36.4% of those driving alone to work had a **Long Commute**¹⁹⁷ 
- In 2021, there were 3,198 crashes resulting in fatalities and/or serious injuries **Safety**¹⁹⁸ 

Reliable access to transportation is essential to function in society and affects if individuals can get to everything from work and doctor's appointments to birthday parties and Friday night football. The United States Department of Transportation (US DOT) tracks communities that are considered **Transportation Disadvantaged Communities**. These communities, or census tracts, are identified as disadvantaged using data that evaluates social vulnerability, risk, resilience, and other community-level factors. Transportation disadvantaged communities spend more and take longer to get where they need to go. In 2022, 495 of Tennessee's census tracts were considered transportation disadvantaged communities, constituting 33.7% of all Tennessee communities. Specific census tract designations and indicators can be viewed using the U.S. DOT's mapping tool.¹⁹⁹

Many communities in Tennessee do not have access to traditional public transit and rely heavily on a personal vehicle. **Access to a Vehicle** is essential where access to traditional public transit is absent or limited. In 2019, 18.4% of Tennessee workers aged 16 and over lived in households with at least one vehicle available, compared to 20.1% in the U.S. While in Tennessee access to a vehicle is largely needed to get from one place to another, relying on a personal vehicle can have negative impacts on the environment by increasing carbon emissions as well as negative effects on individual health. In 2019, 82% of workers aged 16 years and older were **Driving Alone to Work** and 36.4% of those driving alone had a **Long Commute**, defined as more than 30 minutes. In the United States in 2019, 75.9% of workers were driving alone to work and 37.9% of those driving alone had a long commute. Driving alone to work and having a long commute can impact health by decreasing physical activity and increasing the risk of health conditions such as obesity and hypertension. Comparatively using public transit increases physical activity and can improve overall health of individuals and environments.

In 2021, there were 3,198 crashes resulting in fatalities and/or serious injuries in Tennessee, up from 2,680 in 2020. The Tennessee Department of Transportation's Division of Multimodal Transportation looks closely at roadway **Safety** and has local data available publicly through the Pedestrian Safety Prioritization Tool. The Tool identifies the number of injuries and fatalities, presence of sidewalks and bike lanes, speed limits and more for roadways across the state.²⁰⁰

¹⁹⁴ U.S. Department of Transportation, Transportation Disadvantaged Census Tract Data

¹⁹⁵ United States Census Bureau, American Community Survey, 1-Year Public Use Estimates

¹⁹⁶ United States Census Bureau, American Community Survey, 1-Year Public Use Estimates

¹⁹⁷ United States Census Bureau, American Community Survey, 1-Year Public Use Estimates

¹⁹⁸ Tennessee Department of Transportation Fatal and Serious Injury Crashes Data Dashboard

¹⁹⁹ To view local data on Transportation Disadvantaged Communities visit https://www.dots.gov/apps/disadvantaged_communities#/data/445251067574836713

²⁰⁰ To view local data from TDOT's Pedestrian Safety Prioritization Tool visit <https://open.tn.gov/dataset/tennessee-pedestrian-safety-prioritization-tool>

Transportation Disadvantaged Communities

Percentage of Tennessee Communities that spend more and take longer, to get where they need to go (Percent of census tracts with 4 or more transportation disadvantage indicators)

2022 **55.1%**

Data Source: Tennessee Department of Transportation, Transportation Disadvantaged Census Tract Data

Safety

Annual number of crashes resulting in fatalities and/or serious injuries in Tennessee.

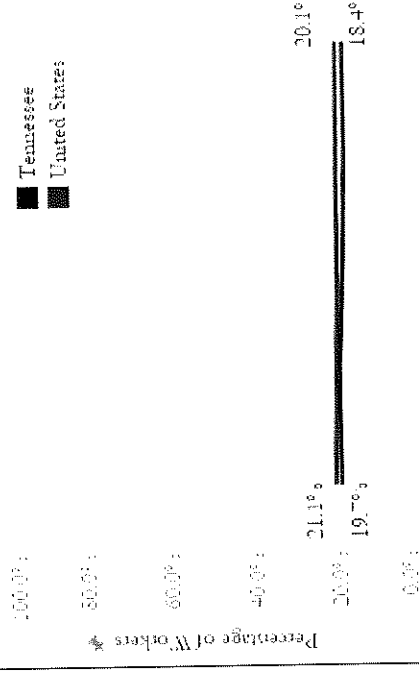
2020 **2,680**

2021 **3,198**

Data Source: Tennessee Department of Transportation Fatal and Serious Injury Crash Data Dashboard

Access to Vehicle

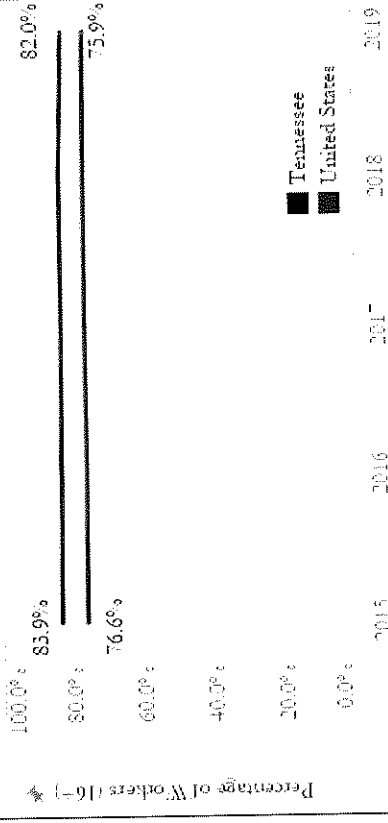
Percentage of workers 16 years and over in households with at least 1 vehicle available



Data Source: United States Census Bureau, American Community Survey, 1-Year Public Use Estimates

Driving Alone to Work

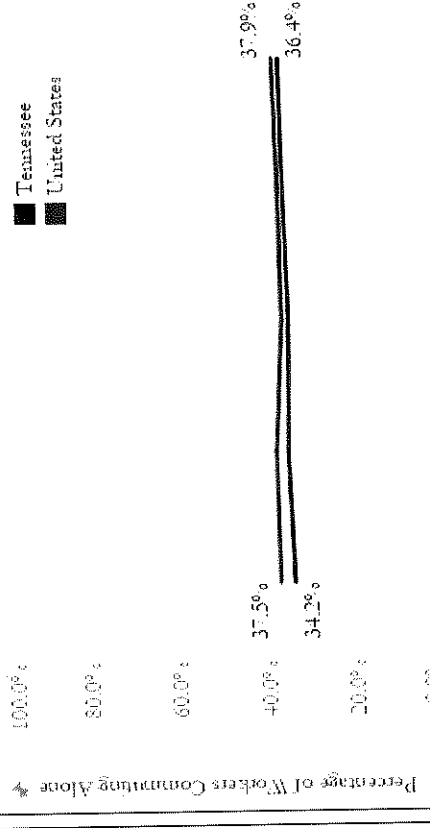
Percentage of workers 16 years and over that drive alone to work



Data Source: United States Census Bureau, American Community Survey, 1-Year Public Use Estimates





Long Commute Driving Alone

Among workers who commute in their car alone, the percentage that commute more than 30 minutes.



Data Source: United States Census Bureau, American Community Survey, 1-Year Public Use Estimates

Social Cohesion

- In 2020, **Voter Participation** was 59.5%.²⁰¹ 
- In 2020, there were 414 **Civic Organizations**.²⁰² 
- In 2020, there were 335 **Social Advocacy Organizations**.²⁰³ 
- In 2020, Tennessee ranked 32 in the nation for volunteerism, with only 31.3% of adults **Volunteering**.²⁰⁴ 

Social cohesion refers to a community or population's investment in “community improvement, social networking, civic engagement, personal recreation, and other activities that create social bonds between individuals and groups.”²⁰⁵

Individuals living in a socially cohesive community experience trust, solidarity, connectedness, and a sense of belonging with one another. As a result, these communities experience more positive health outcomes including everything from lower rates of frailty in older adults to increased physical activity.²⁰⁶

Increased civic engagement can increase a community's social cohesion. The relationship between democracy and health is closely linked, including through a recent Democracy and Health index released by Healthy Democracy Healthy People, a coalition of organizations such as the Association of State and Territorial Health Officials (ASTHO) and American Public Health Association (APHA). In Tennessee, **Voter Participation** is consistently below the U.S. average but follows U.S. trends with higher participation in presidential election years. In 2020, 59.5% of the voting-eligible population participated in the highest office election, compared to 66.0% at the national level.

Civic engagement invests populations with their neighbors and community outcomes. Community engagement is also increased in areas where there is a high presence of **Civic Organizations** and **Social Advocacy Organizations**. Civic organizations are defined as establishments engaged in “promoting the civic and social interests of their members” and include organizations such as parent-teacher associations, alumni associations, veterans' membership organizations and ethnic associations.²⁰⁷ Social advocacy organizations promote a “particular cause or working for the realization of a specific social or political goal to benefit a broad or specific constituency” and include organizations such as community action advocacy organizations, human rights advocacy organizations, and wildlife preservation organizations.²⁰⁸ In 2020, there were 414 civic organizations and 335 social advocacy organizations in Tennessee. Community members may spend time **Volunteering**, with these organizations and others such as faith-based organizations. Despite being the Volunteer State, the percent of adults in Tennessee who volunteer, 31.3% is below the U.S. average of 33.4%. In 2020, Tennessee ranked 32 in the nation for volunteerism.

²⁰¹ United States Election Project, General Election Turnout Rates

²⁰² U.S. Census Bureau, 2010-2020

²⁰³ Data Source: U.S. Census Bureau, 2010-2020

²⁰⁴ U.S. Census Bureau, Current Population Survey (CPS), Volunteer Supplement Data, Accessed via America's Health Rankings

²⁰⁵ C.D. Healthy Places, Social Capital, Retrieved from: <https://www.ahrq.gov/healthy-places/health-topics-social.htm>

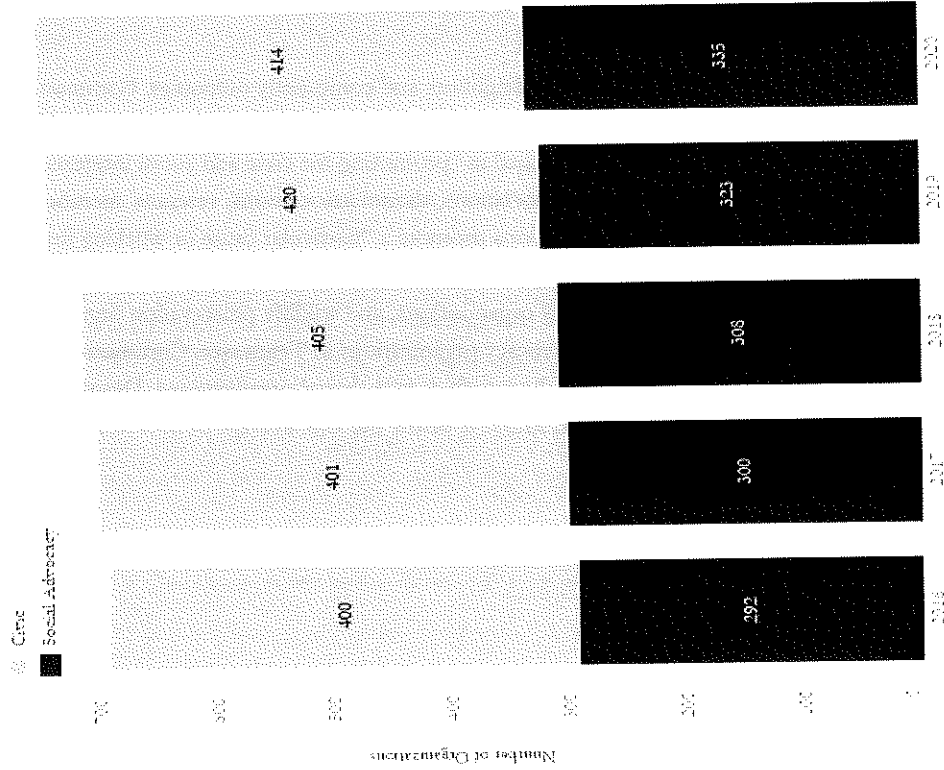
²⁰⁶ Miller HN, Thornton CP, Rodier TE, George RJ Jr, Allen F. Social Cohesion in Health: A Concept Analysis. *ANS Adv Nurs Sci*. 2020 Oct-Dec;43(4):375-390. doi: 10.1097/ANS.0000000000000527. PMID: 32956666; PMCID: PMC7416669.

²⁰⁷ United States Census Bureau, North American Industry Classification System, Accessed via: <https://www.cen-s.gov/nace/?http://www.cen-s.gov/2012/02/nace.html>

²⁰⁸ United States Census Bureau, North American Industry Classification System, Accessed via: <https://www.cen-s.gov/nace/?http://www.cen-s.gov/2012/02/nace.html>

Civic and Social Advocacy Organizations

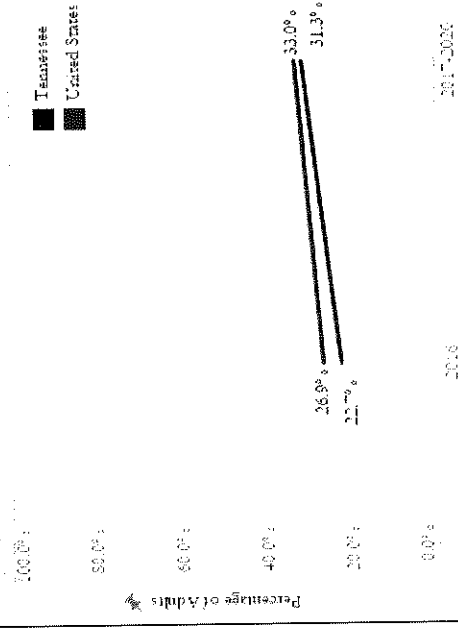
Number of civic organizations and social advocacy organizations in Tennessee
Civic organizations are defined as establishments engaged in "promoting the civic and social interests of their members" and include organizations such as parent-teacher associations, alumni associations, veterans' membership organizations and ethnic associations. Social advocacy organizations promote a "particular cause or working for the realization of a specific social or political goal to benefit a broad or specific constituency" and include organizations such as community action advocacy organizations, human rights advocacy organizations, and wildlife preservation organizations



Don Source: United States Census Bureau

Volunteerism in Tennessee

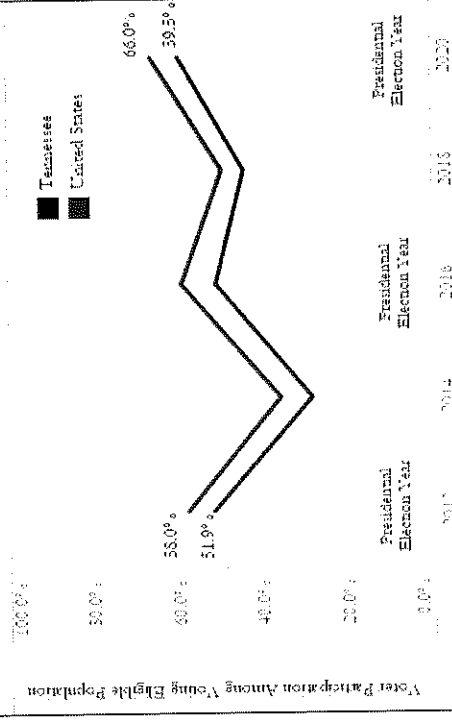
Percentage of adults in the state who volunteer in their communities.



Don Source: U.S. Census Bureau, Current Population Survey, CPS, Volunteer Supplement Data, Accessed via American Health Research

Voter Participation in Tennessee




Percentage of voting-eligible population in the state participating in the highest office election.



Don Source: United States Election Project, General Election Turnout Rates

Environmental Health

Water and Air

- In 2020, 93.9% of Tennessee's water systems met all applicable health-based standards for **Water Quality**.²⁰⁹ 
- 88.8% of Tennessee's population is served by **Fluoridated Water**.²¹⁰ 
- In 2018, Tennessee's annual average of fine **Particulate Matter** (PM_{2.5}) was 8 µg/m³.²¹¹ 

The CDC's Environmental Public Health Tracking Tool maps multiple environmental health factors including air and water quality. Tennessee's **Water Quality** in 2020 was slightly above the U.S. average. In 2020, 93.9% of Tennessee's water systems met all applicable health-based standards, compared to 92.4% in the United States. In addition to maintaining water quality standards, the addition of fluoride into community water systems improves oral health. As detailed in the Tennessee Department of Health 2022 Oral Health Plan, **Community Water Fluoridation** "is the most effective and economical way to prevent tooth decay for all ages."²¹² Approximately 88.8% of Tennessee's population is served by community water systems receiving fluoridated water.

Particulate matter includes droplets or particles such as dust, dirt, and soot existing in the air that may or may not be visible. Inhalation of particulate matter can lead to serious health problems or worsen existing issues such as asthma. The National Ambient Air Quality Standards (NAAQS) state the that long-term (annual) standard for fine **Particulate Matter** (PM_{2.5}) is 12 micrograms per cubic meter of air (µg/m³).²¹³ In 2018, Tennessee's annual average of PM_{2.5} was 8 µg/m³ and therefore met the standard. However, because air pollution and quality vary significantly by location, data should be used more locally where available. Local data available through the CDC's Environmental Public Health Tracking tool show areas of Tennessee that have exceeded the short-term (24-hour) NAAQS standard of 35 µg/m³ despite Tennessee overall meeting the long-term standard. Real-time air quality alerts by zip code are available through "AirNow" which uses data from the U.S. Environmental Protection Agency, National Oceanic and Atmospheric Administration (NOAA), National Park Service, NASA, Centers for Disease Control, and tribal, state, and local air quality agencies.²¹⁴

²⁰⁹ U.S. Environmental Protection Agency (EPA), State Drinking Water Information System, Federal

SDWIS, T11D, Drinking Water Data, Accessed via National Health Security Preparedness Index.

²¹⁰ Centers for Disease Control and Prevention, Water Fluoridation Reporting System, My Water Fluoride Summary Reports.

²¹¹ Centers for Disease Control and Prevention (CDC), Environmental Public Health Tracking Network.

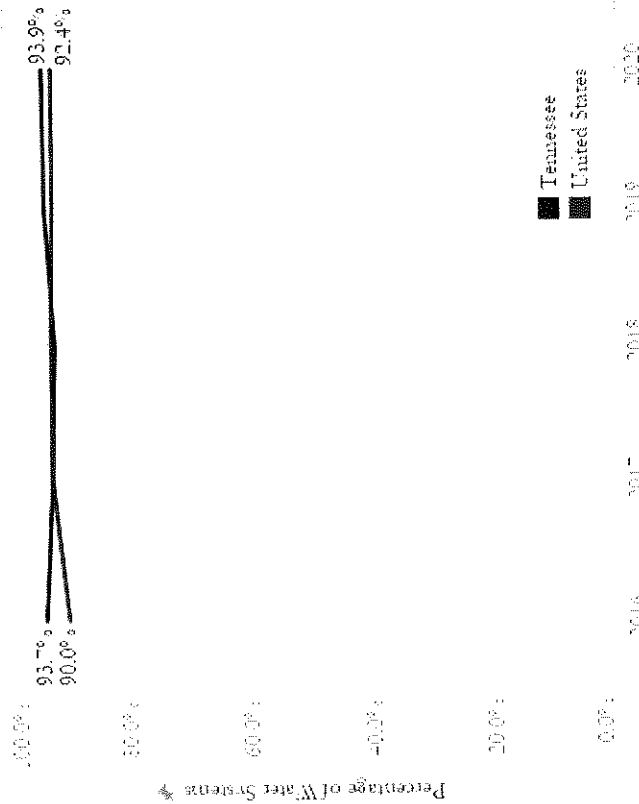
²¹² 2022 Tennessee State Oral Health Plan <https://www.tn.gov/coms/nr/dam/tn/health/documents/2022%20Tennessee20Oral%20Health%20Plan.pdf>

²¹³ U.S. EPA, National Ambient Air Quality Standards (NAAQS) for PM, Accessed December 2022. Retrieved from <https://www.epa.gov/pm-pollution/national-ambient-air-quality-standards-naaqs-pm>

²¹⁴ To view real-time local air quality data visit <https://www.airnow.gov/about-airnow/>

Water Quality

Percentage of community water systems that meet all applicable health-based standards.



Data Source: Environmental Protection Agency (EPA), Safe Drinking Water Information System (Federal SDWIS) SDWIS Safe Drinking Water Data Accessed via National Health Security Preparedness Index

Water Fluoridation

Percentage of TN population served by community water systems that are receiving fluoridated water

2017-2021

88.8%

Data Source: Centers for Disease Control and Prevention, Water Fluoridation Reporting System (W-FRS) Water Fluoridation Summary Report

Air Pollution - Particulate Matter



Average Daily density of fine particulate matter in micrograms per cubic meter (PM 2.5)

2018

8

Data Source: Centers for Disease Control and Prevention (CDC), Environmental Public Health Tracking Network

Weather-Related Illness

- In 2019, the rate of **Heat-Related Emergency Department Visits** was 4.33 visits per 10,000 persons.²¹⁵ 
- In 2019, the rate of **Heat-Related Hospitalizations**²¹⁶ was 0.43 per 10,000 persons.²¹⁷ 

In the United States heat-related weather events cause more fatalities annually than any other weather-related event including floods and tornados.²¹⁸ As temperatures rise globally, heat-related deaths and illnesses will increase particularly for vulnerable populations such as pregnant women, children, and older adults. Increased rates of heat-related illness can impact community health care capacity as emergency department visits and hospitalizations increase. In 2019, the crude rate of **Heat-Related Emergency Department Visits** was 4.33 visits per 10,000 Tennesseans. Heat-related emergency department visits in Tennessee were highest among working aged adults. Preventing heat-related illnesses is especially important for individuals who work outside and may have prolonged exposure to heat. In 2019, the crude rate of **Heat-Related Hospitalizations** was 0.43 per 10,000 Tennesseans. Heat-related hospitalizations were highest among older adults. The Centers for Disease Control houses a county-level heat and health tracker to assist communities in “preparing for a responding to extreme heat events.”²¹⁹ The Tennessee Climate Office releases a Monthly Climate Report which includes a Monthly Temperature Summary detailing mean temperatures across Tennessee counties and how observed temperatures depart from normal temperatures.²²⁰

²¹⁵ Tennessee Department of Health, Division of Policy Health Assessment, Hospital Discharge Data System, 2015-2019, Nashville, TN.

²¹⁶ Tennessee Department of Health, Division of Population Health Assessment, Hospital Discharge Data System, 2015-2019, Nashville, TN.

²¹⁷ Tennessee Department of Health, Division of Population Health Assessment, Hospital Discharge Data System, 2015-2019, Nashville, TN.

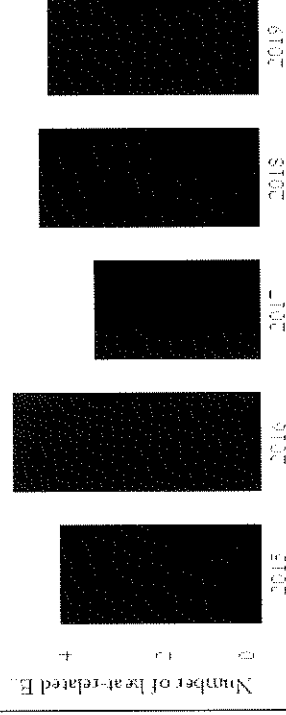
²¹⁸ National Oceanic and Atmospheric Administration, National Weather Service, Weather-Related Fatality and Injury Statistics, Accessed on <https://www.weather.gov/bzaz/fatality>

²¹⁹ Tennessee, CDC Heat & Health Tracker, <https://zephyrplanningdc.org/Applications/HeatTracker/>

²²⁰ Tennessee, Tennessee Climate Office, Monthly Reports, <https://www.tn.gov/about/agencies/2000/climate/tnco/annual-reports/annual-report.php>

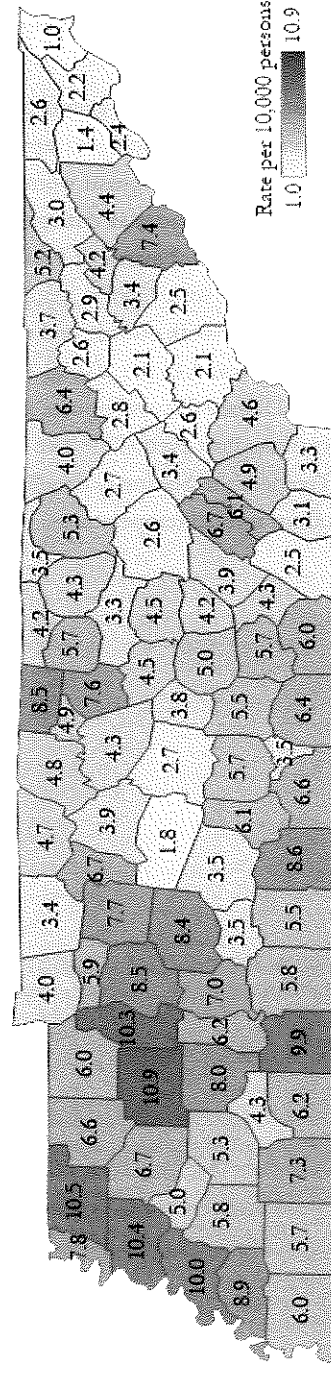
²²¹ Tennessee, Tennessee Climate Office, Monthly Reports, <https://www.tn.gov/about/agencies/2000/climate/tnco/annual-reports/annual-report.php>

Number of heart-related emergency department visits in Tennessee per 10,000 persons



Heat-Related Emergency Department Visits

Number of heat-related emergency department visits in Tennessee per 10,000 persons by county from 2015-2019.



Donna M. Rhee, M.D., M.Sc., is the Deputy Director of the Division of Policy & Health Assessment, Hospital Outpatient Department, 2019, Nashville, TN.

Heat-Related Hospitalizations in Tennessee

Number of heat-related hospitalizations per 10,000 persons in Tennessee

Number of heat-related hospitalizations per 10,000 persons in Tennessee

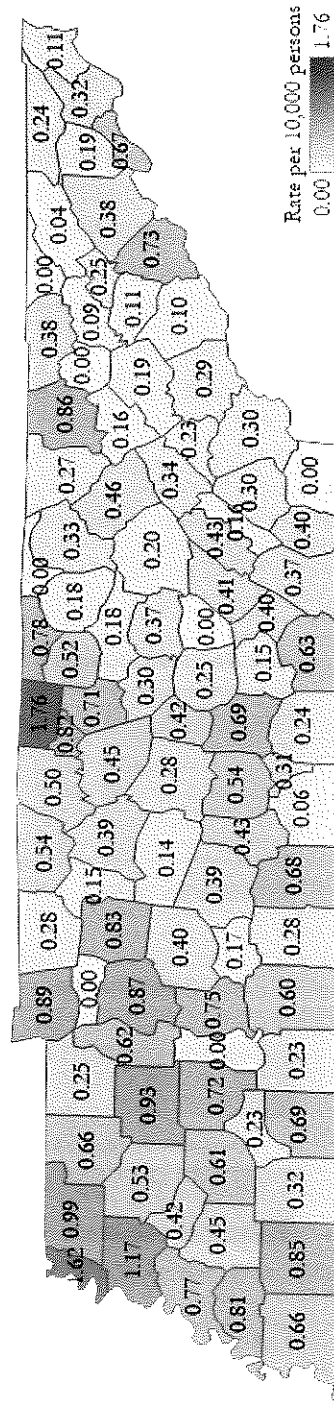


Data Source: Tennessee Department of Health, Division of Population Health Assessment, Hospital Discharge Data System, 2015-2019, Nashville, TN.

Note: Counts tallied by date of admission. Counts less than 11 are represented.

Heat-Related Hospitalizations in Tennessee

Number of heat-related hospitalizations per 10,000 persons by county from 2015-2019.



Data Source: Tennessee Department of Health, Division of Policy Health Assessment, Hospital Discharge Data System, 2019, Nashville, TN.

Emergency Preparedness and Community Resiliency

First responders, smoke detectors, and evacuation plans may come to mind when thinking about emergency preparedness. However, preparing for emergencies also includes building up a community's resiliency which increases a community's ability to respond to and recover from an emergency. Resilient communities are more likely to get kids back to school faster after an emergency, continue to meet non-emergent health care needs through a disaster, and ensure recovery efforts are equitable.

The Tennessee Department of Health's Division of Communicable and Environmental Diseases and Emergency Preparedness (CEDEP) is incorporating the COPEWELL (Composite of Post-Event Well-Being) Model into its community resiliency work. This evidence-based model seeks to understand community resiliency by measuring a community's functioning, population factors, prevention and mitigation factors, social cohesion, preparedness and response, external resource, and resources for recovery. Many of the 43 COPEWELL metrics are captured in the State of Health report including Influenza Vaccination Rates, Severe Housing Problems, Poverty, Voter Participation and more. Improving the factors that contribute to a community's resiliency not only increases its emergency preparedness, but ensures communities are healthier and able to thrive.

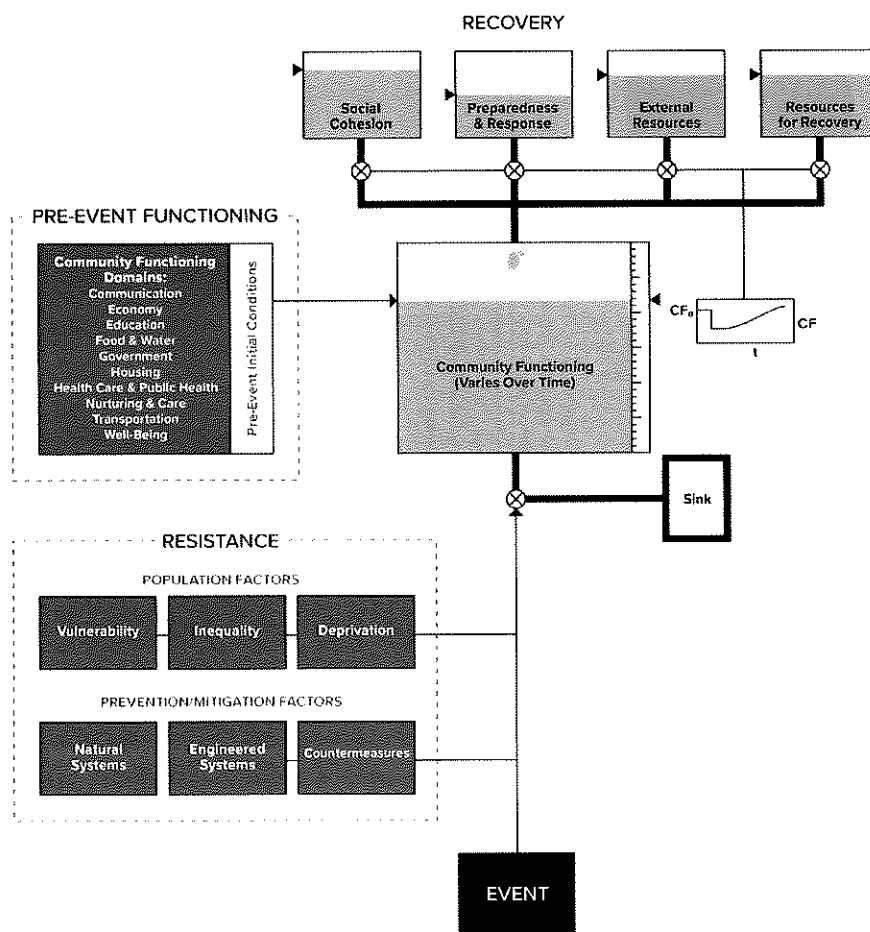


Image source: COPEWELL Framework. Johns Hopkins University.

To view COPEWELL's county level tool measuring community resiliency visit www.copewellmodel.org.







A Healthy System of Care

To assess the health of Tennessee's system of care, the State of Health report considers three of the Principles for Achieving Health outlined in Tennessee state law: Access, Quality of Care, Workforce.

A Healthy System of Care				
Uninsured Adults	Uninsured Children	Underinsured Children	Avoided Care Due to Cost	Adults with Disabilities who Avoided Care Due to Cost
Hospital Closures	Hospital Quality	Preventable Hospitalizations	Breast Cancer Screenings	Colorectal Cancer Screenings
Primary Care Health Professional Shortage Areas	Mental Health Professional Shortage Areas	Dental Health Professional Shortage Areas	Nurses	Palliative Care
Home Health Care				

Access

Every Citizen should have access to reasonable health care.

- In 2021 11.5% of adults in Tennessee were **Uninsured Adults**.²²¹ 
- In 2021, 4.9% of Tennessee's children were **Uninsured Children**.²²² 
- 13.0% of Tennessee Children are **Underinsured Children**.²²³ 
- In 2021, 11.48% of Tennessee adults **Avoided Care due to Cost**.²²⁴ 
- In 2021, 19.63% of adults with disabilities avoided care due to cost, limiting **Access to Care for Adults with Disabilities**.²²⁵ 
- As of 2022, 44% of rural hospitals are at risk of **Hospital Closure**.²²⁶ 

²²¹ United States Census Bureau, American Community Survey, 1-Year Public Use Estimates.

²²² United States Census Bureau, American Community Survey, 1-Year Public Use Estimates.

²²³ SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2017. Accessed via Mental Health America 2021 Rankings.

²²⁴ Behavioral Risk Factors Surveillance System (BRFSS).

²²⁵ Behavioral Risk Factors Surveillance System (BRFSS).

²²⁶ Center for Healthcare Quality and Payment Reform, Rural Hospitals at Risk of Closing, 2022.

²²⁷ Tennessee Department of Health, Tennessee State of Health Report, 2022.

The percentage of **Uninsured Adults** in Tennessee has remained above the U.S. average for years. In 2021, 11.5% of adults in Tennessee were uninsured compared to 9.7% in the U.S. However, the percentage of **Uninsured Children** in Tennessee was slightly below the U.S., with 4.9% of Tennessee's children uninsured compared to the 5.4% in the U.S. in 2021. While 95% of children may be insured, some are underinsured. As youth mental health becomes an increasing priority for leaders across the state and nation, considering what that insurance covers is extremely important. Tennessee ranks 48th in the nation **Underinsured Children** with 13.0% of children with private insurance not receiving coverage for mental or emotional problems. In the U.S. at large, only 8.1% of children are considered underinsured under this definition. The Tennessee Department of Education considers these underinsured children and their needs in their Best for All Plan. Regardless of insurance status, people may still **Avoid Care due to Cost**. In 2021, 11.48% of Tennessee's adults reported not being able to see a doctor due to cost, compared to 8.80% in the U.S. Delaying medical care due to cost or any reason can have significant long-term health implications including not getting appropriate vaccines, cancer screenings and other preventative measures timely. For individuals with disabilities, the cost for health care can be particularly impactful. In a 2020 report from the University of Tennessee, National Disability Institute, and Stony Brook University, researchers found that "a household containing an adult with a disability that limits their ability to work requires, on average, 28 percent more income (or an additional \$17,690 a year) to obtain the same standard of living as a similar household without a member with a disability."²²⁷ In 2021, 19.63% of adults with disabilities avoided care due to cost, limiting **Access to Care for Adults with Disabilities**. More information on uninsured adults and access to safety net services in Tennessee can be found in the TN Department of Health's Annual Safety Net Report.²²⁸

Access to health care in rural Tennessee has faced specific challenges in the last few decades including rural **Hospital Closures**. Tennessee has had 16 rural hospital closures since 2005, the second highest in the nation only surpassed by Texas (24 rural hospital closures since 2005). There are currently 21 rural hospitals in Tennessee at risk of closure, constituting 44% of the state's rural hospitals. Tennessee has the 9th highest percentage of rural hospitals at risk of closure in the United States. Rural hospitals face the specific challenge of balancing community needs and financial viability of the services being offered. For example, in a 2022 study assessing obstetric care in rural hospitals in the United States, many administrators noted that while the volume of obstetric care provided is not high enough to be profitable, it is needed by communities that are otherwise isolated and would have severely limited access to care. Despite this need, hospital administrators in the study indicated that within the next 10 years, offering these services may have to cease due to financial reasons.²²⁹

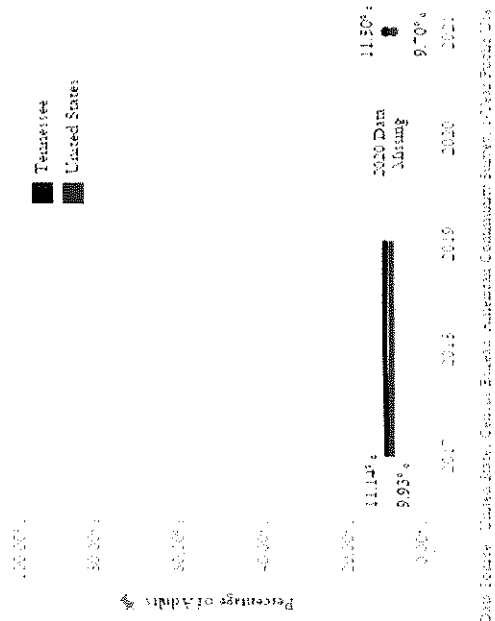
²²⁷ Anderson, Clements, Mosim, Michaelly Moore, Zachary McGarry, Joseph. The Financial Cost of Living with a Disability in the U.S. - Re-center the Policy Field. October 2020. Accessed December 2022 at <https://www.nationaldisabilityinstitute.org/wp-content/uploads/2020/10/Financial-Cost-Living-with-a-Disability.pdf>.

²²⁸ To view the Annual TN Department of Health System Report, visit <https://www.tn.gov/health/health-program/annual-report-on-health-systems-allocation-and-health-system-prospects/>

²²⁹ Fichtmanoff, K.W., Brown, B.D., Adams, E.L., Grant, Heather, M., Ried, H., and Adams, C. Women Above All: Financial Viability, and Community Need for Obstetric Services. *PLoS Currents* 2022; 14: e1220001. <https://doi.org/10.1371/journal.pcur.1220001>

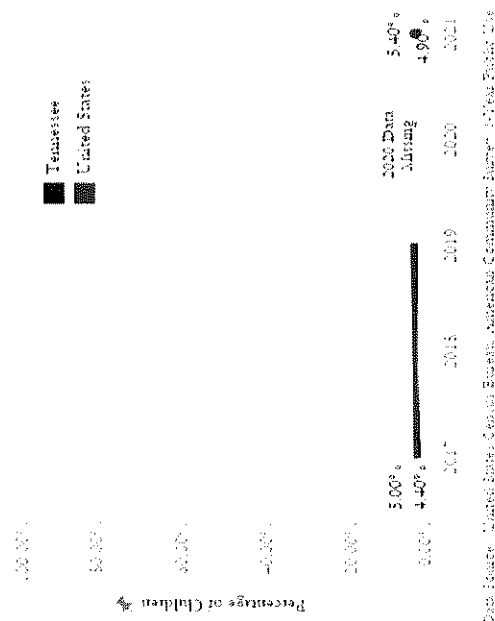
Uninsured Adults

Percentage of persons 19 and older who are uninsured.



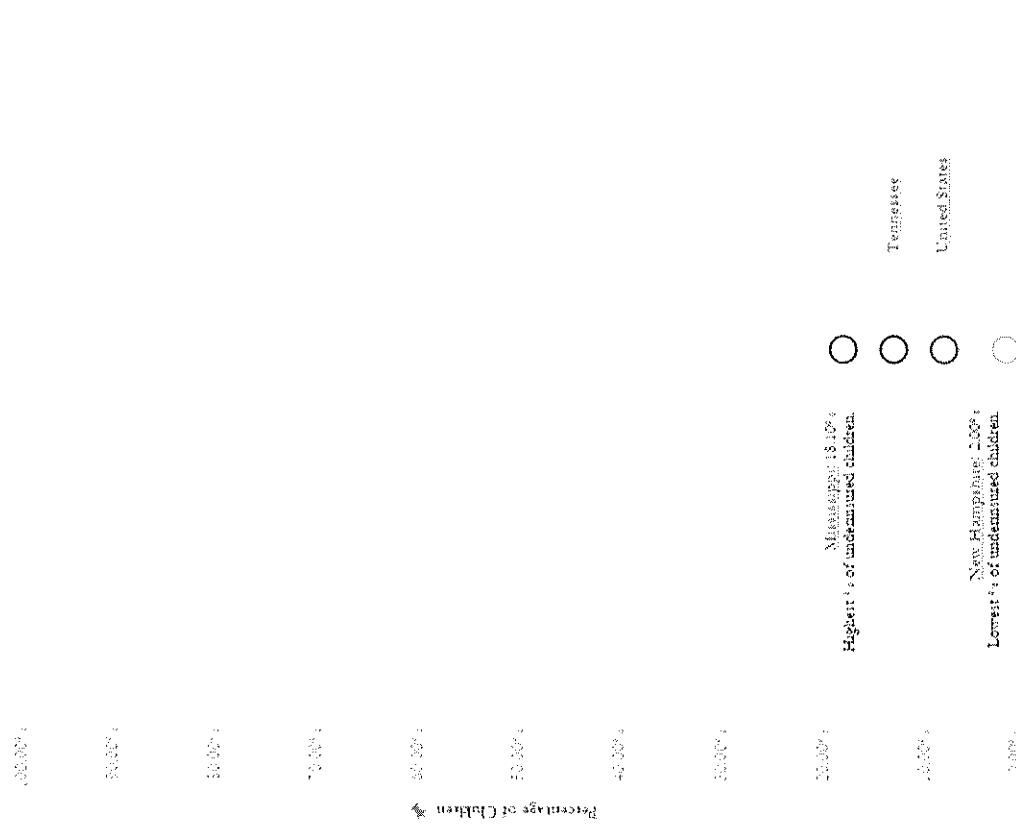
Uninsured Children

Percentage of persons 18 and under who are uninsured.



Underinsured Children

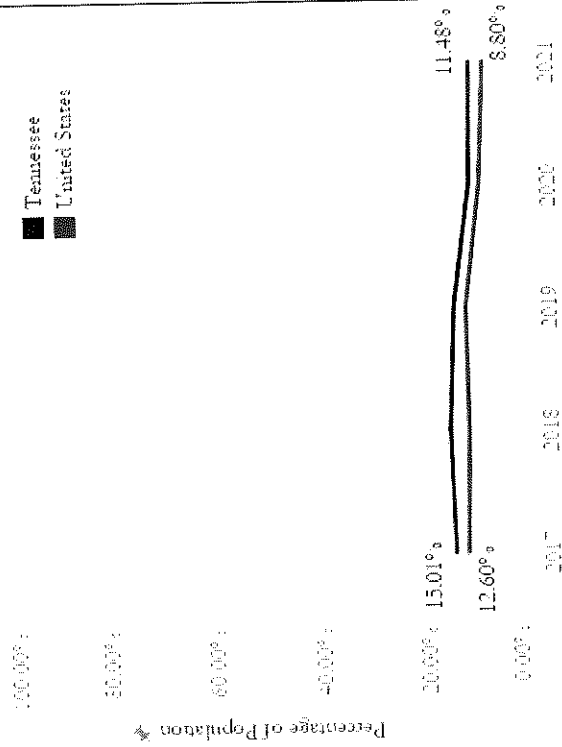
Percentage of children with private insurance that did not cover mental or emotional problems. Tennessee ranks 45 in the nation, with 15.0% of children with private insurance not covering mental or emotional problems.



Data Source: AHA/HA, Center for Behavioral Health Metrics and Quality, National Survey on Drug Use and Health, 2017. Accessed via Mental Health America 2021 Rankings.

Avoided Care Due to Cost

Percentage of Population who could not see a doctor due to cost in the past 12 months among adults 18 years of age or older

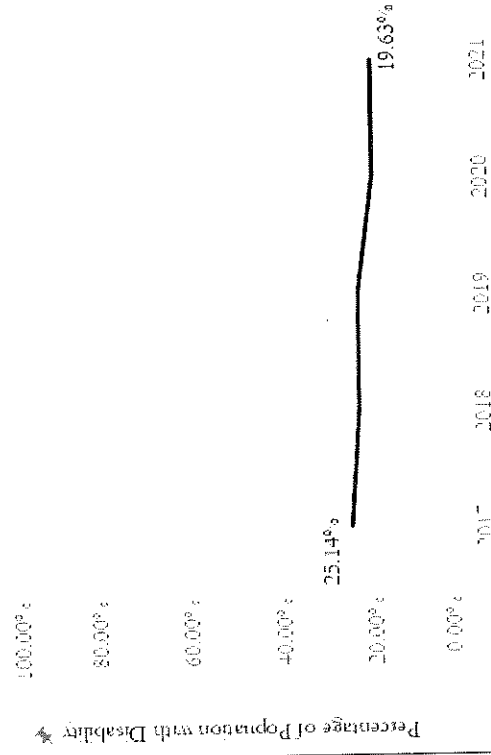


Data Source: Behavioral Risk Factor Surveillance System: BRFSS

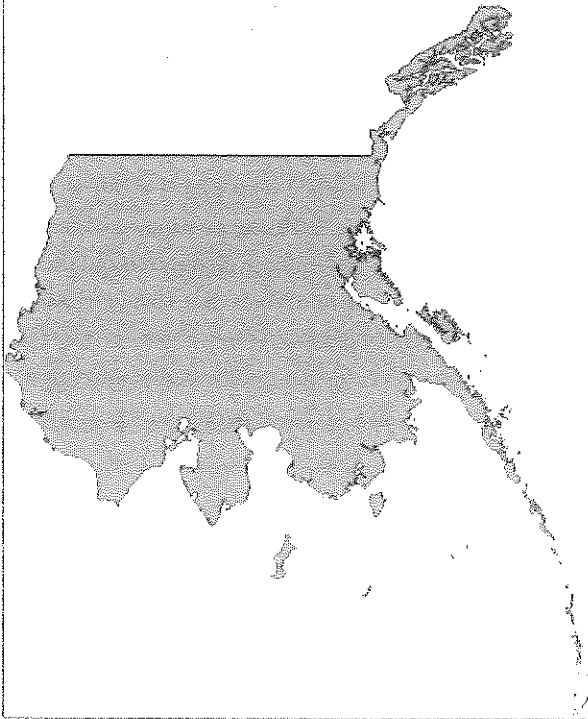
Adults with Disabilities who Avoided Care

Due to Cost

Percentage of Tennessee Population with a disability who could not see a doctor due to cost in the past 12 months among adults 18 years of age or older



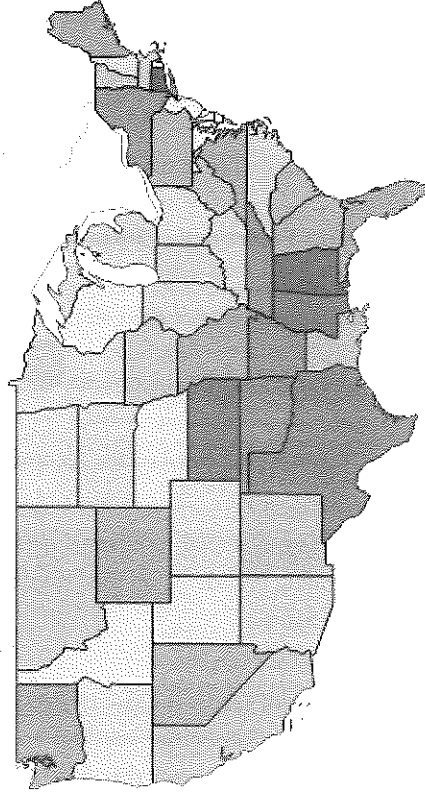
Data Source: Behavioral Risk Factor Surveillance System: BRFSS



Rural Hospital Closures

Tennessee has had 16 rural hospital closures since 2005, the second highest in the nation, surpassed only by Texas (24 rural hospital closures since 2005). There are currently 21 rural hospitals in Tennessee at risk of closure, constituting 44% of the state's rural hospitals. Tennessee has the 9th highest percentage of rural hospitals at risk of closure in the United States.

Number of Rural TN Hospitals Closed Since 2005	16
Number of Rural TN Hospitals At Risk of Closure	21
Percentage of Rural TN Hospitals At Risk of Closure	44.0%



Percentage At Risk of Closure
0.00% 5.00%

Every citizen should have confidence that the quality of health care is continually monitored, and standards are adhered to by providers.

- Hospital Quality** across Tennessee is similar to hospital quality overall in the U.S. In 2021, 33.3% of hospitals in Tennessee had the top-quality rating (Grade A) on the Hospital Safety Score and 31.2% of hospitals in the U.S. received a Grade A on the Hospital Safety Score.

Another measure indicating quality of care is the rate of **Preventable Hospitalizations**. Preventable hospitalizations refer to inpatient stays/discharges for ambulatory care-sensitive conditions such as diabetes and asthma. These hospitalizations are deemed preventable because evidence shows that consistent quality access to primary care should manage these chronic health conditions sufficiently to prevent hospitalizations. Reducing preventable hospitalizations reduces financial burden on individuals and health care systems and increases health care capacity. In 2019, there were 1513 preventable hospitalizations per 100,000 Tennesseans. While 2020 data on preventable hospitalizations is available, there was a drastic decrease associated with the COVID-19 pandemic which impacted both patient decision making and hospital capacity.

Preventative clinical care is cost-effective and improves patient outcomes. Preventative clinical care includes cancer screenings such as for **Breast Cancer** and **Colorectal Cancer**. Tennessee has an age-adjusted breast cancer incidence rate of 123.8 cases per 100,000 females. The U.S. rate is 128.1 cases per 100,000 females. Since 2018, the percentage of females aged 40+ who reported having a mammogram in the past 2 years has remained around 71% in both Tennessee and the United States. Tennessee's breast cancer mortality rate is 21.6 per 100,000 females compared to the U.S.'s 19.6 per 100,000 females. Tennessee's age-adjusted incidence rate of colorectal cancer is 34.6 per 100,000 persons. The U.S. rate is 33.0 cases per 100,000 persons. Since 2018, the percentage of persons aged 50+ who reported ever having a colorectal endoscopy has increased in both Tennessee and the United States. In 2020, 74.94% of Tennesseans and 74.2% of person sin the United

2015, 2020 Influenza Hospital Discharges Data, *Source: Division of Population and Health, Assisting Territories Department of Health, Methodology: Australian Health Data Collection, 2015*

to provide a more complete picture of the impact of the pandemic on the health care system. The authors of this review suggest that the impact of the pandemic on the health care system is likely to be significant and that the impact will be felt for some time. The authors also suggest that the impact of the pandemic on the health care system is likely to be felt for some time. The authors also suggest that the impact of the pandemic on the health care system is likely to be felt for some time.

Regional Red Taroni Surveillance System (RRTS)

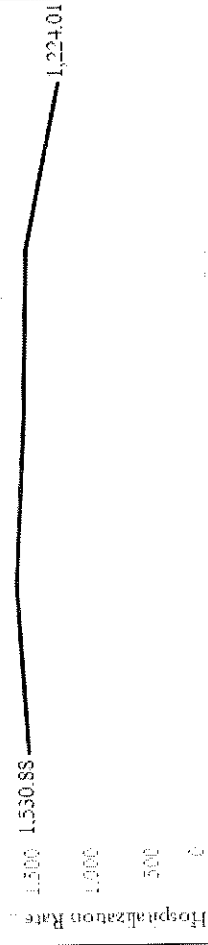
[illegible]

States received the recommended colorectal cancer screening. Tennessee's colorectal cancer mortality rate is 14.8 per 100,000 persons compared to the U.S.'s 13.1 per 100,000 persons.

Preventable Hospitalizations

Hospitalization Rate: Number of hospitalizations for ambulatory care-sensitive conditions per 100,000 adults.

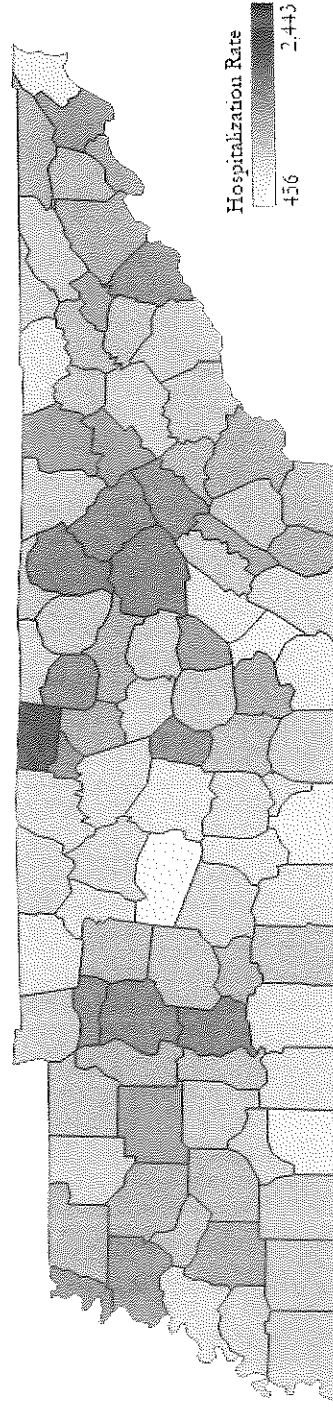
Note: COVID-19 has also been associated with statistically significant decreases in preventable hospitalizations, particularly respiratory-related preventable hospitalizations such as asthma. Despite these seemingly positive decreases in preventable hospitalizations, the pandemic impacted both patient decision making as well as hospital capacity. The decreases should be interpreted with caution.



Data Source: 2016-2020 Inpatient Hospital Discharge Data System, Division of Population Health Assessment, Tennessee Department of Health, Methodology: Agency for Healthcare Research and Quality, 2015 Methodology for PQI 90

2020 Preventable Hospitalizations

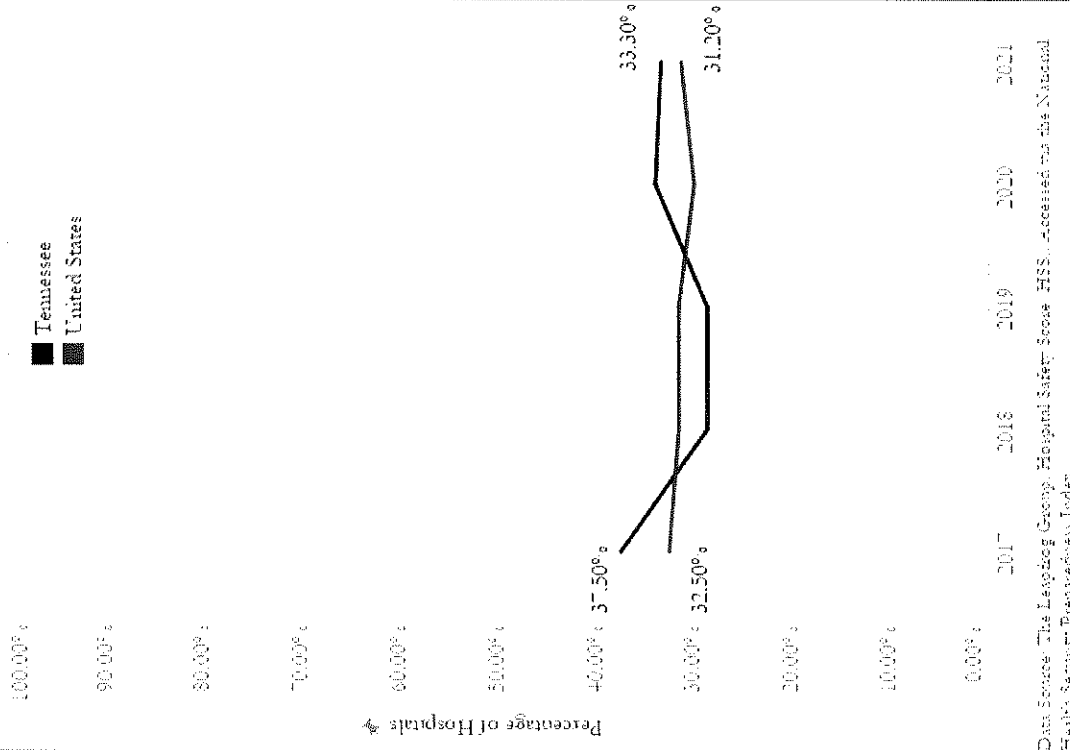
Hospitalization Rate: Number of hospitalizations for ambulatory care-sensitive conditions per 100,000 adults in 2020.



Data Source: 2020 Inpatient Hospital Discharge Data System, Division of Population Health Assessment, Tennessee Department of Health, Methodology: Agency for Healthcare Research and Quality, 2015 Methodology for PQI 90
 Data Note: COVID-19 has also been associated with statistically significant decreases in preventable hospitalizations, particularly respiratory-related preventable hospitalizations such as asthma. Despite these seemingly positive decreases in preventable hospitalizations, the pandemic impacted both patient decision making as well as hospital capacity. The decreases should be interpreted with caution.

Hospital Quality

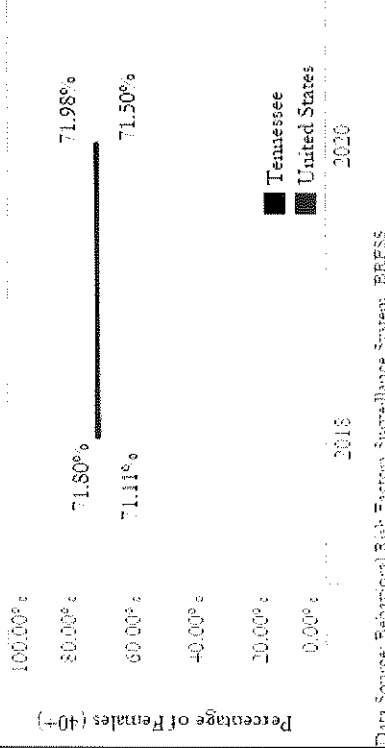
Percentage of hospitals in the state with a top quality ranking (Grade A) on the Hospital Safety Score



Breast Cancer Screenings

Percentage of Females Ages 40+ who reported having a Mammogram in Past 2 Years.

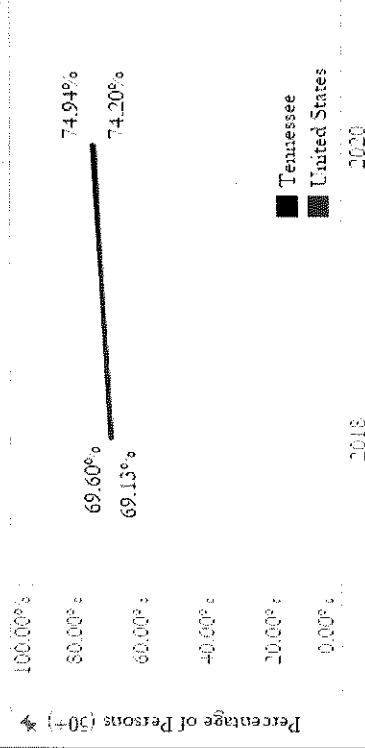
Breast Cancer Screenings in Tennessee increased from 71.11% in 2018 to 71.98% in 2020.



Colorectal Cancer Screenings

Percentage of persons ages 50+ who reported ever having a Colorectal Endoscopy (Sigmoidoscopy or Colonoscopy).







Screenings in Tennessee increased from 69.13% in 2018 to 74.94% in 2020.



Note: Between 2018 and 2020, screening criteria changed based on age. Results shown are for calculated variable reporting percentage of respondents 50+ meeting USPSTF recommendations for screening.

Workforce

The state should support the development, recruitment, and retention of a sufficient and quality health and health care workforce.

- In 2022, 92.6% of Tennessee counties were **Primary Care Health Professional Shortage Areas**.²³⁵ 
- In 2022, 95.8% of Tennessee counties were considered **Dental Health Professional Shortage Areas**.²³⁶ 
- In 2022, 96.8% of Tennessee counties were considered **Mental Health Professional Shortage Areas**.²³⁷ 
- In 2019, there were 2012.1 **Nurses** per 100,000 Tennesseans.²³⁸ 
- In 2022, there were 22.5 **Home Health** aides per 1,000 Tennesseans aged 65+ with a disability.²³⁹ 
- In 2021, 29.4% of Tennessee hospitals provided **Palliative Care** programs.²⁴⁰ 

Health Professional Shortage Areas (HPSA) are defined as “areas experiencing a shortage of health care services.”²⁴¹ Individuals living in HPSAs can have higher rates of hospitalization and overall poorer health.²⁴² In 2022, 92.6% of Tennessee counties were considered **Primary Care Health Professional Shortage Areas**, 95.8% of Tennessee counties were considered **Dental Health Professional Shortage Areas**, and 96.8% of Tennessee counties were considered **Mental Health Professional Shortage Areas**. Additionally, all out-of-state counties bordering Tennessee were Mental Health Professional Shortage Areas. Living in health professional shortage areas is an issue across the United States, with 99 million Americans living in primary care shortage areas, 70 million living in dental health shortage areas, and 158 million living in mental health professional shortage areas. Nationally, an additional 17,063 primary care practitioners, 11,908 dental health practitioners, and 7,934 mental health practitioners are needed to meet today’s needs.²⁴³ More information on Health Professional Shortage Areas and access to safety net services in Tennessee can be found in the TN Department of Health’s Annual Safety Net Report.²⁴⁴

Shortages and workforce challenges extend beyond practitioner staff to nursing staff. In 2019, there were 2012.1 **Nurses** per 100,000 Tennesseans. In the U.S in 2019, there were 2045.9 nurses per 100,000 persons. These numbers are expected to

²³⁵ Health Services and Resource Administration, Accessed December 2022 via Rural Health Information Hub.

²³⁶ Health Services and Resource Administration, Accessed December 2022 via Rural Health Information Hub.

²³⁷ Health Services and Resource Administration, Accessed December 2022 via Rural Health Information Hub.

²³⁸ National Council of State Boards of Nursing (NCSBN), National Nursing Data Survey, Accessed December 2022 via the National Health Council, Preparedness Hub.

²³⁹ U.S. Census Bureau, American Community Survey, Accessed via American Health Reporting.

²⁴⁰ American Hospital Association (AHA), Annual Survey of Hospitals, Accessed via the National Health Security Program, Guide.

²⁴¹ HHS’s Health Workforce, What is a Designated Shortage? Accessed December 2022. Retrieved from <https://hhs.healthworkforce.gov/shortage-areas/shortage-designation/modernization/#q-q>.

²⁴² Ishida, AL, Pugh, Susan E, Lin J, Localanabeky, Bilalman A, Rose, WJ, Almoradi G. The Association between Health Professional Shortage Area (HPSA) status, Workforce composition, and Non-Practitioner Personnel and Job Discontinuity. *Health Care Workforce* 2022; 18(2):199-209. doi:10.1016/j.hcw.2022.0077, PMID: 3571498; PMCID: PMC9396412.

²⁴³ Health Services and Resource Administration, Health Workforce Shortage Areas, Accessed December 2022 from <http://data.hrsa.gov/topics/health-workforce/shortage-areas>.

²⁴⁴ Tennessee’s Annual Safety Net Report can be found at <https://www.tn.gov/health/health-programs/annual-safety-net-report>.

be lower in 2022 as shortages have increased during and after the pandemic. Nursing support staff such as certified nursing assistants and personal aides who provide **Home Health** care are also critical to Tennessee's health care work force. In 2022, Tennessee had half the number of personal care and home health aides per 1,000 adults aged 65+ with a disability than the U.S. Tennessee had a 22.5 aides per 1,000 adults while the U.S. had 57.7 aides per 1,000 adults. Tennessee has an aging population and seeks to support older adults aging in place, but the current nursing infrastructure is inadequate to meet the future population's needs.

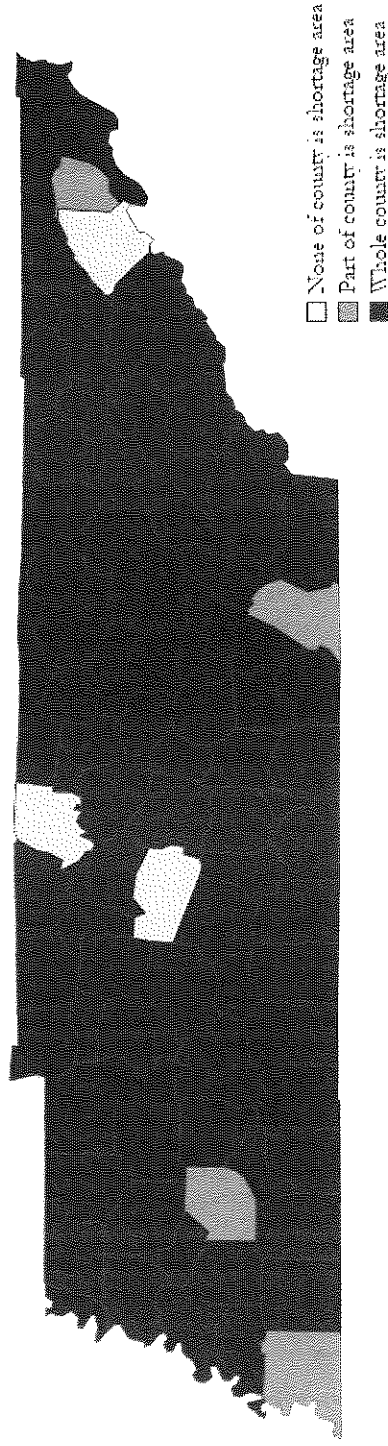
Specialist-level care is also needed for many individuals to treat and manage complex chronic and acute health conditions. **Palliative Care**, is defined as "specialized care for people facing serious illness, focusing on providing relief of suffering (physical, psychosocial, and spiritual), to maximize quality of life for both the patient and family."²⁴⁵ Examples of persons who may use palliative care include children with cancer or older adults with dementia. The benefits of palliative care include relieving symptoms, care coordination across multiple specialties, and clarifying treatment goals and options.²⁴⁶ In 2021, 29.4% of Tennessee hospitals provided palliative care programs compared to 39.7% in the United States.

²⁴⁵ TN Dept of Health, Palliative Care. Accessed December 2022 from <https://www.tn.gov/health/health-programs/department-of-public-health/palliative-care/>

²⁴⁶ American Academy on Palliative Care, Get Palliative Care – TMO. Accessed December 2022 from <https://getpalliativecare.net/about/get/>

Primary Care Health Professional Shortage Areas

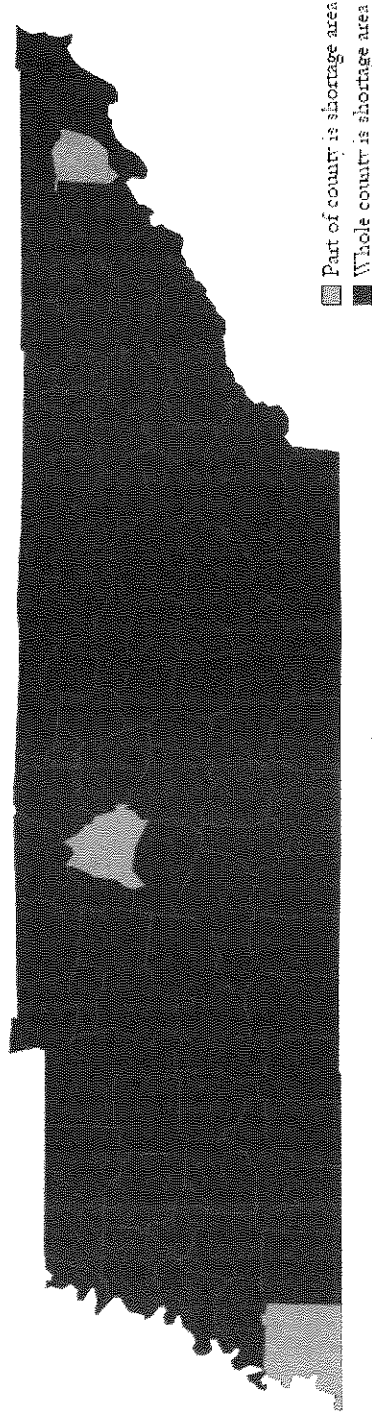
In 2022, 92.6% of Tennessee counties were considered Primary Care Health Professional Shortage Areas.



Data Source: Health Services and Resources Administration. Accessed via Rural Health Information Hub

Mental Health Professional Shortage Areas

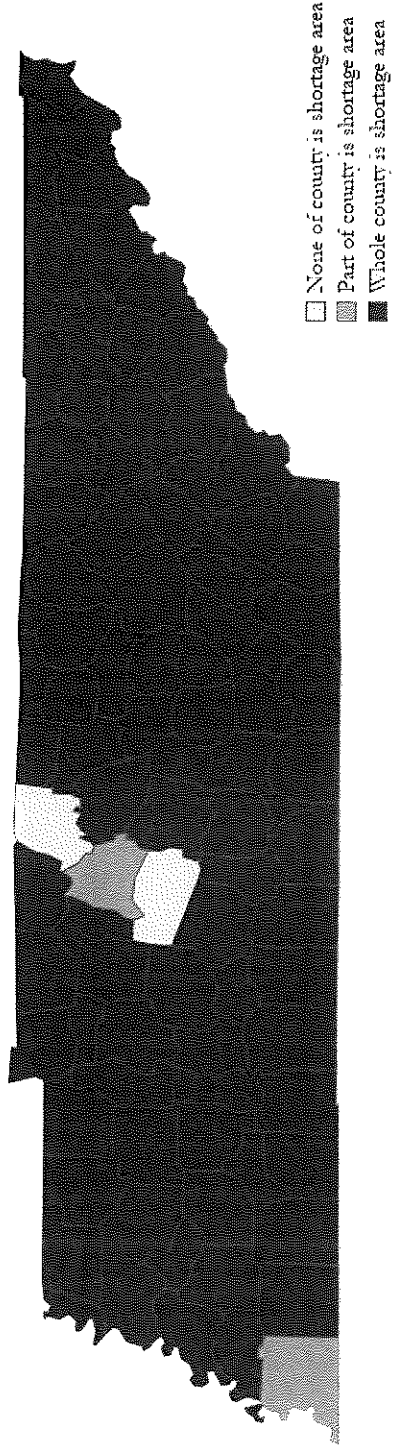
In 2022, 96.8% of Tennessee counties were considered Mental Health Professional Shortage Areas.



Data Source: Health Services and Resources Administration. Accessed via Rural Health Information Hub

Dental Health Professional Shortage Areas

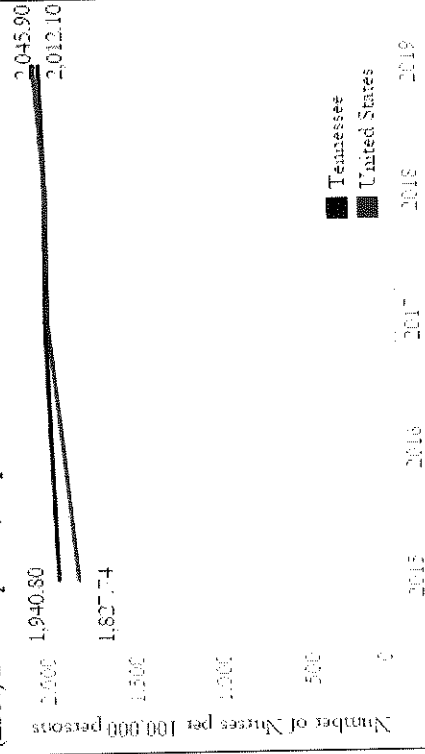
In 2022, 95.8% of Tennessee counties were considered Dental Health Professional Shortage Areas.



Data Source: Health Services and Resources Administration. Accessed via Rural Health Information Hub

Nurses

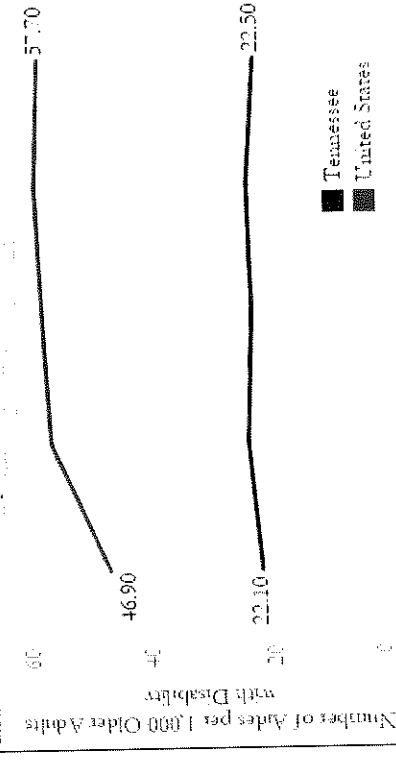
Number of active registered nurse (RN) and licensed practical nurse (LPN) licenses per 100,000 persons.



Data Source: National Council of State Boards of Nursing, NCSBN, National Nursing Database. Accessed via the National Health Security Preparedness Index.

Home Health Care

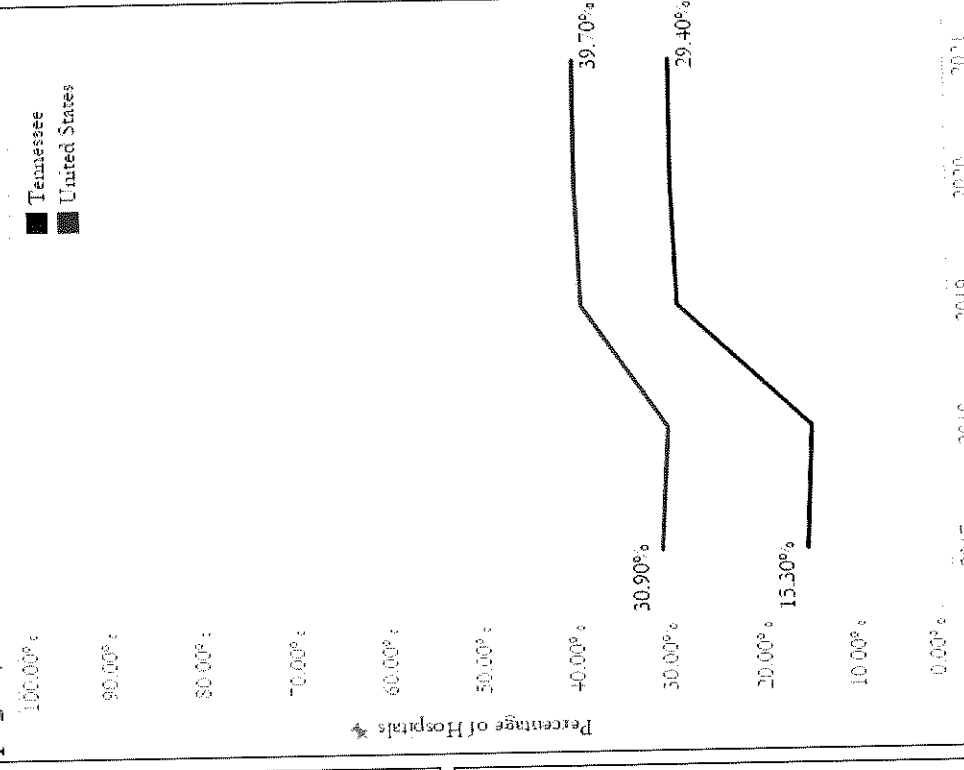
Number of personal care and home health aides per 1,000 adults ages 65 and older with a disability.



Data Source: U.S. Census Bureau, American Community Survey, accessed via American Health Security Preparedness Index.

Palliative Care

Percentage of hospitals providing palliative care programs (includes both palliative care program and/or palliative care inpatient unit, but excludes pain management program, patient-controlled analgesia, and hospice program).



Data Source: American Hospital Association, AHA, Annual Survey of Hospitals. Accessed via the National Health Security Preparedness Index.

Working Towards a Healthy Tennessee

Using input from subject matter experts and review of the over 100 metrics in this report, this first annual State of Health Report provides a data-based foundation for identifying efforts to improve health in Tennessee. This report will guide focus groups to develop actionable recommendations for inclusion in the upcoming 2-year State Health Plan. Through use of the new State Health Plan Framework, this annual report and the State Health Plan will further guide the Department towards its vision of “Healthy People, Healthy Communities, Healthy Tennessee.”

Appendix

Appendix A: Statutory Authority for the State Health Plan

The Division of Health Planning was created by action of the Tennessee General Assembly and signed into law by Governor Phil Bredesen (Tennessee Code Annotated § 68-11-1625). The Division is charged with creating and updating a State Health Plan. The text of the law follows.

- a. There is created the state health planning division of the department of finance and administration²⁴⁷. It is the purpose of the planning division to create a state health plan that is evaluated and updated at least annually. The plan shall guide the state in the development of health care programs and policies and in the allocation of health care resources in the state.
- b. It is the policy of the state of Tennessee that:
 1. Every citizen should have reasonable access to emergency and primary care;
 2. The state's health care resources should be developed to address the needs of Tennesseans while encouraging competitive markets, economic efficiencies and the continued development of the state's health care industry;
 3. Every citizen should have confidence that the quality of health care is continually monitored and standards are adhered to by health care providers; and
 4. The state should support the recruitment and retention of a sufficient and quality health care workforce.
- c. The planning division shall be staffed administratively by the department of finance and administration in a manner that the department deems necessary for the performance of the planning division's duties and responsibilities, which may include contracting for the services provided by the division through a private person or entity
- d. The duties and responsibilities of the planning division include:
 1. To develop and adopt a State Health Plan, which must include, at a minimum, guidance regarding allocation of the state's health care resources;
 2. To submit the State Health Plan to the Health Services and Development Agency for comment;
 3. To submit the State Health Plan to the Governor for approval and adoption;
 4. To hold public hearings as needed;
 5. To review and evaluate the State Health Plan at least annually;
 6. To respond to requests for comment and recommendations for health care policies and programs;
 7. To conduct an ongoing evaluation of Tennessee's resources for accessibility, including, but not limited to, financial, geographic, cultural, and quality of care;
 8. To review the health status of Tennesseans as presented annually to the Division by the Department of Health, the Department of Mental Health and Substance Abuse Services, and the Department of Intellectual and Developmental Disabilities;
 9. To review and comment on federal laws and regulations that influence the health care industry and the health care needs of Tennesseans;

²⁴⁷ The state health planning division is now located in the Tennessee Department of Health.

10. To involve and coordinate functions with such State entities as necessary to ensure the coordination of State health policies and programs;
11. To prepare an annual report for the General Assembly and recommend legislation for its consideration and study; and
12. To establish a process for timely modification of the State Health Plan in response to changes in technology, reimbursement and other developments that affect the delivery of health care.

Appendix B: Subject Matter Expert Partners

State of Health Subject Matter Expert Partners
Tennessee Department of Health
Division of Communicable and Environmental Diseases and Emergency Preparedness
Division of Community Health Services
Division of Family Health and Wellness
Division of Health Disparities Elimination
Division of Population Health Assessment
Office of Information and Analytics
Office of Injury Prevention - Suicide Prevention
Office of Overdose Response Coordination
Office of Patient Care Advocacy
Office of Primary Prevention
Office of Strategic Initiatives
Non-Department of Health
Tennessee Climate Office
Tennessee Department of Education
Tennessee Department of Environment and Conservation
Tennessee Department of Human Services
Tennessee Department of Mental Health and Substance Abuse Services
Tennessee Department of Transportation
Tennessee Housing Development Agency
University of Tennessee Department of Agriculture

Appendix C: Detailed State of Health Metric List

Measure	Definition	Data Source
A Healthy Start		
Children in Poverty	Percentage of all persons under 18 years of age whose income in the past 12 months is below the poverty level	United States Census Bureau. 2015-2019 American Community Survey 1-Year Public Use Estimates.
Child Food Insecurity	Percentage of households with children who are food insecure (low or very low food security status).	United States Department of Agriculture, Economic Research Service - Current Population Survey, Food Security Supplement, 1-Year Public Use Estimates 2017-2021. Retrieved from IPUMS CPS, University of Minnesota, www.ipums.org and USDA, ERS www.ers.usda.gov .
Child WIC Coverage	Percentage of children ages 1-4 eligible for the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) who received WIC benefits in an average month	United States Department of Agriculture Food and Nutrition Service, National and State Level Estimates of WIC Eligibility and Program Reach in 2020. Retrieved from National and State Level Estimates of WIC Eligibility and Program Reach in 2020 Food and Nutrition Service (usda.gov)
Overall WIC Coverage	Percentage of women, infants, and children eligible for the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) who received WIC benefits in an average month.	United States Department of Agriculture Food and Nutrition Service, National and State Level Estimates of WIC Eligibility and Program Reach in 2020. Retrieved from National and State Level Estimates of WIC Eligibility and Program Reach in 2020 Food and Nutrition Service (usda.gov)
SNAP Participation	Percentage of people who are eligible for SNAP who actually participate in the program	United States Department of Agriculture Food and Nutrition Service. Retrieved from www.fns.usda.gov
Foster Care Instability	Percentage of children in foster care with three or more placements within 12 months	United States Department of Health and Human Services, Children's Bureau, Child Welfare Outcomes Report Data. Accessed via America's Health Rankings.
Child Care	Number of children DHS licensed child care facilities have capacity to serve.	Licensed child care facility list accessed on December 2, 2022 on the Tennessee Department of Human Services website. Population calculated within Tableau built environment using 2018 data.
	Percentage of children attending a DHS licensed child care facility with access to a sliding fee payment scale.	Licensed child care facility list accessed on December 2, 2022 on the Tennessee Department of Human Services website. Median household income calculated within Tableau built environment using 2018 data. Note: If a percent is not listed, no facilities in that county offer a sliding fee scale.
School Nurses	Percentage of TN Public Schools employing a full-time nurse	Tennessee Coordinated School Health Annual School Health Services Report. Retrieved from www.tn.gov/education
School Counselors	Percentage of school districts with one certified counselor per 500 students	Tennessee Coordinated School Health Annual School Health Services Report. Retrieved from www.tn.gov/education
Third Grade Reading Level*	Percentage of public-school students in grade 3 that test "on track" and "mastered" for ELA on TN Ready	(3rd grade): Tennessee Department of Education; (4th grade): National Assessment of Educational Progress (NAEP) Report Card: Reading, State Achievement Level Results. Retrieved from www.nationsreportcard.gov
ACEs	Percentage of children ages 0-17 who experienced two or more ACEs (2 Year Estimate)	National Survey of Children's Health. Retrieved from www.childhealthdata.org

Youth Safety	Experienced Physical Dating Violence: Percentage of those who experienced physical violence (being physically hurt on purpose (counting such things as being hit, slammed into something, or injured with an object or weapon) by someone they were dating or going out with) one or more times during the 12 months before the survey, among students who dated or went out with someone during the 12 months before the survey	Centers for Disease Control, Youth Risk Behavior Surveillance System
	Carried a Gun: Percentage of high school students who carried a gun (on at least 1 day during the 12 months before the survey, not counting the days when they carried a gun only for hunting or for a sport such as target shooting).	Centers for Disease Control, Youth Risk Behavior Surveillance System
	Childhood Vaccinations: Percentage of children who received by age 35 months all recommended doses of the combined 7-vaccine series: diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine; measles, mumps and rubella (MMR) vaccine; poliovirus vaccine; Haemophilus influenzae type b (Hib) vaccine; hepatitis B (HepB) vaccine; varicella vaccine; and pneumococcal conjugate vaccine (PCV)	Centers for Disease Control and Prevention, National Immunization Survey-Child (Birth Cohort). Accessed via CDC Child Vax View.
Infectious Disease	HPV Vaccinations: Percentage of adolescents ages 13-17 who received all recommended doses of the human papillomavirus (HPV) vaccine	Centers for Disease Control and Prevention, National Immunization Survey-Teen. Accessed via CDC Child Vax View.
	Congenital Syphilis: Rate per 100,000 live births	Department of Health Division of Communicable and Environmental Diseases and Emergency Preparedness; (US) CDC STD Surveillance Report, 2020. Data Note: 2016-2019 TN rates are based on counts <20 and should be interpreted with caution.
Asthma	Percentage of children ages 0-17 who currently have asthma (2-year estimate)	National Survey of Children's Health, U.S. Department of Health and Human Services, Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB)
Youth Obesity*	Percentage of public-school students with a body mass index (BMI) greater than or equal to the 85th percentile for children of the same age and sex	(TN): Tennessee Department of Education Coordinated School Health Annual Body Mass Index Report; (US): National Health and Nutrition Examination Survey 2017–March 2020 Prepandemic Data Files Development of Files and Prevalence Estimates for Selected Health Outcomes. National Center for Health Statistics (U.S.) Published Date: 06/14/2021 Data Note: Youth obesity data in Tennessee is collected through evaluation in schools. Nationally, youth obesity data is collected through the National Health and Nutrition Examination Survey.
Electronic Vapor Usage*	Percentage of high school students who reported ever using electronic vapor products (including e-cigarettes, vapes, vape pens, e-cigars, e-hookahs, hookah pens, and mods).	Centers for Disease Control, Youth Risk Behavior Surveillance System
Drugs on School Property	Percentage of high school students who were offered, sold, or given an illegal drug on school property (during the 12 months before the survey).	Centers for Disease Control, Youth Risk Behavior Surveillance System. Note: In 2015 Tennessee data was not collected.
Youth Mental Health	Hopelessness: Percentage of high school students enrolled in grades 9 to 12 who reported being sad or hopeless almost every day for 2 or more weeks in a row so that they stopped doing some usual activities, during the 12 months before the survey.	Centers for Disease Control, Youth Risk Behavior Surveillance System

	Suicide Attempt: Percentage of youth with one or more suicide attempts resulting in an injury, poisoning, or overdose that had to be treated by a doctor or nurse (during the 12 months before the survey).	Centers for Disease Control, Youth Risk Behavior Surveillance System
	Suicide Mortality Rate: Number of deaths due to intentional self-harm per 100,000 population (<18)	Centers for Disease Control, Youth Risk Behavior Surveillance System
Prenatal Care	Percentage of live births in which the mother began prenatal care between the first and sixth month of pregnancy	(TN): Tennessee Department of Health. Birth Statistical File - TN Office of Vital Statistics; (US): CDC National Vital Statistics Report Vol. 70 No 17 February 7, 2022. US Value for 2020 available in report only.
Smoking During Pregnancy	Percentage of mothers who reported smoking cigarettes during pregnancy	(TN): Tennessee Department of Health. Birth Statistical File - TN Office of Vital Statistics; (US): CDC National Vital Statistics Report Vol. 70 No 17 February 7, 2022. US Value for 2020 available in report only.
Preterm Births	Percentage of live births preterm (<37 weeks gestation)	(TN): Tennessee Department of Health. Birth Statistical File - TN Office of Vital Statistics; (US): CDC National Vital Statistics Report Vol. 70 No 17 February 7, 2022. US Value for 2021 not available.
Low Birthweight	Percentage of live births with low birthweight (<2,500 grams).	(TN): Tennessee Department of Health. Birth Statistical File - TN Office of Vital Statistics; (US): CDC National Vital Statistics Report Vol. 70 No 17 February 7, 2022. US Value for 2021 not available.
Breastfeeding	Percentage of live births where breastfeeding is initiated at birth.	(TN): Tennessee Department of Health. Birth Statistical File - TN Office of Vital Statistics; (US): CDC National Vital Statistics Report Vol. 70 No 17 February 7, 2022. US Value for 2020 available in report only.
Postpartum Depression	Percentage of women with a recent live birth who reported experiencing depressive symptoms	Centers for Disease Control and Prevention, Pregnancy Risk Assessment Monitoring System or State Equivalent
Infant Mortality*	Number of infant deaths per 1,000 live births	(TN): Tennessee Department of Health. Birth Statistical File - TN Office of Vital Statistics; (US): CDC National Vital Statistics Report Vol. 70 No 17 February 7, 2022. US Value for 2021 not listed.
Maternal Mortality	Pregnancy-Related Mortality Ratio (PRMR) - deaths within one year of pregnancy where pregnancy was the aggravating factor	Tennessee Department of Health. Death Statistics - TN Office of Vital Statistics. Accessed via the Tennessee Department of Health Maternal Mortality Review Annual Report.
	Pregnancy-Associated, but not related, deaths: Deaths within one year of pregnancy where pregnancy was NOT the aggravating factor	Tennessee Department of Health. Death Statistics - TN Office of Vital Statistics. Accessed via the Tennessee Department of Health Maternal Mortality Review Annual Report.
Teen Births	Number of births per 1,000 women aged 15-19 years	(TN): Tennessee Department of Health. Birth Statistical File - TN Office of Vital Statistics; (US): CDC WONDER, Natality Public Use Files. Accessed via America's Health Rankings.
A Healthy Life		
Per Capita Personal Income*	Annual, not seasonally adjusted, per capita personal income in dollars	United States Bureau of Economic Analysis. Retrieved from www.bea.gov
Adult Poverty	Percentage of all persons 18 years and over whose income in the past 12 months is below the poverty level	United States Census Bureau, American Community Survey, 1-Year Public Use Estimates.
Food Insecurity	Percentage of population who lack adequate access to food (all ages)	USDA Economic Research Service. Note: *Difference from U.S. average was statistically significant with 90 percent confidence ($t > 1.645$). Standard error of differences assumes that there is no correlation between national and individual State estimates.

Poverty and the Labor Force	Number of people 20-64 years of age who are living below poverty level who are participating in the labor force (employed or unemployed)	United States Census Bureau, American Community Survey, 1-Year Public Use Estimates.
Unemployment	Percentage of the labor force who are unemployed.	US Census Bureau, American Community Survey
Workplace Benefits	Percentage of employed workers in the state who used some type of paid time off (PTO) benefit.	US Census Bureau, Current Population Survey (CPS), Annual Social and Economic Supplement (ASEC). Accessed via National Health Security Preparedness Index.
Fatal Occupational Injuries	The number of fatal occupational injuries per 100,000 full-time equivalent workers	U.S. Bureau of Labor Statistics, Census of Fatal Occupational Injuries; State Archive
Adult Numeracy	Percentage of adults considered proficient at working with mathematical information and ideas (at or above Level 3)	National Center for Education Statistics
Adult Literacy	Percentage of adults considered proficient at working with information and ideas in texts (at or above Level 3)	National Center for Education Statistics
Violent Crime	Violent Crime Rate: Number of violent crime offenses (murder, rape (legacy definition), robbery, and aggravated assault) per 100,000 population	Federal Bureau of Investigation
Domestic Violence	Number of Domestic Violence Offenses	TN Bureau of Investigation, Annual Domestic Violence Report
	Chlamydia: Rate of newly diagnosed chlamydia cases per 100,000 population.	Department of Health Division of Communicable and Environmental Diseases and Emergency Preparedness; (US) CDC STD Surveillance Report, 2020.
	HIV: Rate of diagnoses of HIV infection among persons aged ≥13 years	CDC, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. Note: 2020 HIV data reflect the impact of COVID-19 (intermittent clinic closures, reduction in availability of services resulting in delays in accessing HIV Prevention and care, limited staff capacity to investigate HIV laboratory reports) and should be interpreted with caution.
Infectious Disease	Hepatitis C Virus: Rates of reported cases of acute Viral Hepatitis C per 100,000	CDC, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
	COVID-19 Vaccinations: Percent of Tennesseans fully vaccinated (2 doses of Pfizer/Moderna OR 1 dose of Janssen) against COVID-19 as of November 2, 2022.	Centers for Disease Control and Prevention. COVID Data Tracker. Atlanta, GA: US Department of Health and Human Services, CDC; 2022
	Influenza Vaccination: Percentage of adults who reported receiving a seasonal flu vaccine in the past 12 months	Behavioral Risk Factors Surveillance System (BRFSS)
Chronic Conditions	Percentage of adults who have three or more of the following chronic health conditions: arthritis; asthma; chronic kidney disease; chronic obstructive pulmonary disease; cardiovascular disease (heart disease, heart attack or stroke); cancer (excluding skin); depression; diabetes	Behavioral Risk Factors Surveillance System (BRFSS)
Adult Smoking	Percentage of adults who are current smokers (age-adjusted)	Behavioral Risk Factors Surveillance System (BRFSS)
Physical Activity*	Percent of adults who reported doing physical activity or exercise during the past 30 days other than their regular job	Behavioral Risk Factors Surveillance System (BRFSS)
Diabetes	Percentage of adults who have diabetes	Behavioral Risk Factors Surveillance System (BRFSS); US Data for 2017 and 2018 is missing.
Alcohol Consumption	Binge Drinking: Percentage of adults who are binge drinkers (males having five or more drinks on one occasion, females having four or more drinks on one occasion) (variable calculated from one or more BRFSS questions	Behavioral Risk Factors Surveillance System (BRFSS)

Drug Overdose*	Number of drug overdose outpatient visits and inpatient stays caused by non-fatal acute poisonings due to the effects of drugs, regardless of intent	TDH, Office of Informatics and Analytics, Controlled Substance Monitoring Database
Drug Overdose*	Number of all drug overdose deaths	TDH, Office of Informatics and Analytics, Controlled Substance Monitoring Database
Mental Health	Frequent Mental Distress: Percentage of adults who reported their mental health was 'not good' 14 or more days during the past 30 days	Behavioral Risk Factors Surveillance System (BRFSS)
	Suicidal Ideation Rate: Number of ED visits and inpatient hospitalizations with suicidal ideation per 10,000 emergency department visits and inpatient hospitalizations	Tennessee Department of Health, Hospital Discharge Data System
	Nonfatal Intentional Self-Harm Injury: Number of ED visits and inpatient hospitalizations for intentional self-harm injury per 10,000 emergency department visits and inpatient hospitalizations	Tennessee Department of Health, Hospital Discharge Data System
	Suicide Mortality: Number of deaths due to intentional self-harm per 100,000 population (18+)	Tennessee Department of Health Death Statistics
Premature Death	Crude Rate Years of Potential Life Lost (YPLL) before Age 75 for 10 Leading Causes of Death (All Causes)	CDC, National Center for Health Statistics - WISQARS
65+ Poverty	Percentage of adults ages 65 and older who live below the poverty level	US Census Bureau, American Community Survey
Grandparents Raising Grandchildren	Percentage of population aged 65+ serving as a primary caregiver to a child.	US Census Bureau, American Community Survey
Elder Abuse	Adult Protective Services: Number of Abuse Investigations	Tennessee Department of Human Services Annual Report
Social Isolation	Percentage of population aged 65+ living alone.	US Census Bureau, American Community Survey
Falls 65+	Percentage of adults ages 65 and older who reported falling in the past 12 months	Behavioral Risk Factors Surveillance System (BRFSS)
Caregiving	Caregiving (Caregiving BRFSS Optional module)	Behavioral Risk Factors Surveillance System (BRFSS)
Dementia	Subjective Cognitive Decline (BRFSS Optional Module)	Behavioral Risk Factors Surveillance System (BRFSS)
A Healthy Environment		
Housing	Severe Housing Problems: Percentage of households with at least 1 of 4 housing problems: overcrowding, high housing costs, lack of kitchen facilities, or lack of plumbing facilities	HUD's Comprehensive Housing Affordability Strategy (CHAS) data
	Severe Housing Cost Burden: Percentage of households that spend 50% or more of their household income on housing	HUD's Comprehensive Housing Affordability Strategy (CHAS) data
	Homelessness: Annual point-in-time count of persons experiencing homelessness	Housing and Urban Development Exchange CoC Homeless Populations and Subpopulations Reports Data Note: As a point-in-time count, this number severely undercounts the number of persons experiencing homelessness.
Broadband Access	Percentage of households with broadband internet connection	U.S. Census Bureau, American Community Survey
Access to Parks and Greenways*	Percentage of population with adequate access to locations for physical activity	Business Analyst, Delorme map data, ESRI, & US Census Tigerline Files
Transportation	Transportation Disadvantaged Communities: Percentage of Tennessee Communities that spend more and take longer, to get where they need to go (Census tracts with 4 or more transportation disadvantage indicators)	US Department of Transportation, Transportation Disadvantaged Census Tract Data

Social Capital and Cohesion	Access to Vehicle: Percentage of workers 16 years and over in households with at least 1 vehicle available.	United States Census Bureau, American Community Survey, 1-Year Public Use Estimates
	Driving Alone to Work: Percentage of the workers 16 years and over that drive alone to work	United States Census Bureau, American Community Survey, 1-Year Public Use Estimates
	Long Commute-Driving Alone: Among workers who commute in their car alone, the percentage that commute more than 30 minutes	United States Census Bureau, American Community Survey, 1-Year Public Use Estimates
	Safety: annual number of crashes resulting in fatalities and/or serious injuries	Tennessee Department of Transportation Fatal and Serious Injury Crashes Data Dashboard
	Voter Participation: Percentage of voting-eligible population in the state participating in the highest office election.	United States Election Project, General Election Turnout Rates
	Civic Organizations: Number of Civic Organizations	US Census Bureau, 2016-2020
Water	Social Advocacy Organizations: Number of Social Advocacy Organizations	US Census Bureau, 2016-2020
	Volunteering: Percent of adults in the state who volunteer in their communities	US Census Bureau, Current Population Survey (CPS), Volunteer Supplement Data. Accessed via America's Health Rankings.
	Water Quality: Percentage of community water systems in a state that meet all applicable health-based standards.	Environmental Protection Agency (EPA), Safe Drinking Water Information System Federal (SDWIS/FED) Drinking Water Data. Accessed via National Health Security Preparedness Index.
Air	Community Water Fluoridation: *Percent of population served by community water systems that are receiving fluoridated water	Centers for Disease Control and Prevention, Water Fluoridation Reporting System, My Water Fluoride Summary Reports
	Air Pollution - Particulate Matter: Average Daily density of fine particulate matter in micrograms per cubic meter (PM 2.5)	Centers for Disease Control and Prevention (CDC), Environmental Public Health Tracking Network.
Weather-Related Illness	Heat Related Illness ED Visits: Crude rate of heat-related emergency department visits in Tennessee per 10,000 persons	Tennessee Department of Health, Hospital Discharge Data System
	Heat Related Illness Hospitalizations: Crude rate per 10,000 persons of heat-related hospitalizations.	Tennessee Department of Health, Hospital Discharge Data System
A Healthy System of Care		
Insurance	Uninsured Adults: Percentage of persons 19 and older who are uninsured	United States Census Bureau, American Community Survey, 1-Year Public Use Estimates
	Uninsured Children: Percentage of persons 18 and under who are uninsured	United States Census Bureau, American Community Survey, 1-Year Public Use Estimates
	Underinsured Children: Percent of Children with Private Insurance that did not cover mental or emotional problems	SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2017. Accessed via Mental Health America 2021 Rankings.
Avoided Care Due to Cost	Percent of Population who could not see a doctor due to cost in the past 12 months among adults 18 years of age or older	Behavioral Risk Factors Surveillance System (BRFSS)
Access to Care for Adults with Disabilities	Percent of Population with a disability who could not see a doctor due to cost in the past 12 months among adults 18 years of age or older	Behavioral Risk Factors Surveillance System (BRFSS)
Hospital Closures	# Of Rural TN Hospitals at Immediate or High Risk of Closing	Center for Healthcare Quality and Payment Reform
Hospital Quality	Percent of hospitals in the state with a top-quality ranking (Grade A) on the Hospital Safety Score.	The Leapfrog Group, Hospital Safety Score (HSS)
Preventable Hospitalizations*	Hospitalization rate for ambulatory care-sensitive conditions per 100,000 adults	Tennessee Department of Health, Hospital Discharge Data System

	Breast Cancer: Percentage of Females Ages 40+ who reported having a Mammogram in Past 2 Years	Behavioral Risk Factors Surveillance System (BRFSS)
Cancer Screenings	Colorectal Cancer: Percentage of persons ages 50+ who reported ever having a Colorectal Endoscopy (Sigmoidoscopy or Colonoscopy)	Behavioral Risk Factors Surveillance System (BRFSS)
	Primary Care: Percent of TN Counties considered Primary Care HPSAs	Health Services and Resources Administration. Accessed via Rural Health Information Hub.
Health Professional Shortage Areas	Mental Health: Percent of TN Counties considered Mental HPSAs	Health Services and Resources Administration. Accessed via Rural Health Information Hub.
	Dental: Percent of TN Counties considered Dental HPSAs	Health Services and Resources Administration. Accessed via Rural Health Information Hub.
Nurses	Number of active registered nurse (RN) and licensed practical nurse (LPN) licenses per 100,000 population in the state.	National Council of State Boards of Nursing (NCSBN), National Nursing Database. Accessed via the National Health Security Preparedness Index.
Palliative Care	Percent of hospitals in the state providing palliative care programs (includes both palliative care program and/or palliative care inpatient unit, but excludes pain management program, patient-controlled analgesia, and hospice program).	American Hospital Association (AHA), Annual Survey of Hospitals. Accessed via the National Health Security Preparedness Index.
Home Health Care	Number of personal care and home health aides per 1,000 adults ages 65 and older with a disability	U.S. Census Bureau, American Community Survey. Accessed via America's Health Rankings.

